

1

AD-A166 764

RESEARCH PRODUCT 82-11

MISSION-BASED ANALYSES OF ARMOR TRAINING  
REQUIREMENTS. VOLUME II. ARMOR OPERATION  
TIME SEQUENCES

ARI FIELD UNIT AT FORT KNOX, KENTUCKY

April 1982

DTIC FILE COPY



This document has been approved  
for public release and sale; its  
distribution is unlimited.

86

4

4

A

046

DTIC  
ELECTE  
S  
APR 09 1986  
D

U.S. ARMY RESEARCH INSTITUTE for the BEHAVIORAL and SOCIAL SCIENCES

## **DISCLAIMER NOTICE**

**THIS DOCUMENT IS BEST QUALITY  
PRACTICABLE. THE COPY FURNISHED  
TO DTIC CONTAINED A SIGNIFICANT  
NUMBER OF PAGES WHICH DO NOT  
REPRODUCE LEGIBLY.**

# U. S. ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES

A Field Operating Agency under the Jurisdiction of the  
Deputy Chief of Staff for Personnel

JOSEPH ZEIDNER  
Technical Director

L. NEALE COSBY  
Colonel, IN  
Commander

---

Research accomplished under contract to  
the Department of the Army

Human Resources Research Organization (HumRRO)

## NOTICES

**FINAL DISPOSITION:** This Research Product may be destroyed when it is no longer needed. Please do not return it to the U.S. Army Research Institute for the Behavioral and Social Sciences.

**NOTE:** This Research Product is not to be construed as an official Department of the Army document in its present form.

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

AD-A166764

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM																
1. REPORT NUMBER Research Product 82-11	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER																
4. TITLE (and Subtitle) MISSION-BASED ANALYSES OF ARMOR TRAINING REQUIREMENTS, VOLUME II, ARMOR OPERATION TIME SEQUENCES.		5. TYPE OF REPORT & PERIOD COVERED Final Report Jan 1980 - Feb 1981																
7. AUTHOR(s) Richard E. O'Brien and Eugene H. Drucker		6. PERFORMING ORG. REPORT NUMBER FR-MTRD(KY)-81-2																
9. PERFORMING ORGANIZATION NAME AND ADDRESS Human Resources Research Organization 300 North Washington Street - Alexandria, VA 22314		8. CONTRACT OR GRANT NUMBER(s) MDA 903-80-C-0229																
11. CONTROLLING OFFICE NAME AND ADDRESS US Army Research Institute for the Behavioral and Social Sciences. 5001 Eisenhower Ave. Alexandria, VA 22333		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS Project Element 63743A - Project 2Q263743A794 Task 1E, WU 002																
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE April 1982																
		13. NUMBER OF PAGES 145																
		15. SECURITY CLASS. (of this report) UNCLASSIFIED																
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE																
16. DISTRIBUTION STATEMENT (of this Report)  Approved for public release; distribution unlimited																		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)																		
18. SUPPLEMENTARY NOTES Research performed by HumRRO, Fort Knox Office, P.O. Box 293, Fort Knox, Kentucky 40121, and monitored by David W. Bessemer, ARI Field Unit at Fort Knox.																		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) <table border="0"> <tr> <td>Armor</td> <td>Armor Missions</td> <td>Leadership</td> <td>Platoon Tasks</td> </tr> <tr> <td>Tanks</td> <td>Tank Platoons</td> <td>Armor Operations</td> <td>Collective Training</td> </tr> <tr> <td>Armor Training</td> <td>Tank Team</td> <td>Platoon Drills</td> <td>Tank Commander</td> </tr> <tr> <td>Platoon Operations</td> <td>Platoon Leader</td> <td>Crew Tasks</td> <td>Mission Analysis</td> </tr> </table>			Armor	Armor Missions	Leadership	Platoon Tasks	Tanks	Tank Platoons	Armor Operations	Collective Training	Armor Training	Tank Team	Platoon Drills	Tank Commander	Platoon Operations	Platoon Leader	Crew Tasks	Mission Analysis
Armor	Armor Missions	Leadership	Platoon Tasks															
Tanks	Tank Platoons	Armor Operations	Collective Training															
Armor Training	Tank Team	Platoon Drills	Tank Commander															
Platoon Operations	Platoon Leader	Crew Tasks	Mission Analysis															
20. ABSTRACT (Continue on reverse side if necessary and identify by block number)  A detailed analysis was conducted of armor operations to provide the basis for developing a set of platoon drills for combined individual and collective armor training. The analysis provided information on the stages of armor operations, the individual and collective tasks that are performed during each stage, training objectives for these tasks, leadership tasks that are performed during each stage, and the types of factors that affect armor operations during combat.																		

DD FORM 1 JAN 73 1473

EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

1 SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

item 20, continued

An analysis of armor operations was conducted to identify, classify, and interrelate the activities performed during tank platoon missions. Volume II\* of this report contains diagrams and flow charts illustrating the sequence of activities occurring during tank team and tank platoon operations. *Key word: Armor Operations*

Other reports in the series are as follows:

- Volume I: Final Report
- \*Volume II: Armor Operation Time Sequences
- Volume III: Leadership Tasks Performed During Tank Platoon Operations
- Volume IV: Crewman Tasks Performed During Tank Platoon Operations
- Volume V: Relationships Among Collective and Individual Tasks in Tank Platoon Operations
- Volume VI: Training Objectives for Tank Platoons and Crews
- Volume VII: Training Objectives for the XM1 Loader

9

A-124

## FOREWORD

---

This is Volume II of the Final Report of a project entitled Mission-Based Simulation and Training Requirements. The report contains the results of an analysis of tank platoons and missions. The other volumes of the Final Report are Volume I: Final Report; Volume III: Leadership Tasks Performed During Tank Platoon Operations; Volume IV: Crewman Tasks Performed During Tank Platoon Operations; Volume V: Relationships Among Collective and Individual Tasks in Tank Platoon Operations; Volume VI: Training Objectives for Tank Platoons and Crews; and Volume VII: Training Objectives for the XM1 Loader.

The work reported here was performed at the Fort Knox Office of the Human Resources Research Organization (HumRRO), under Contract No. 903-80-C-0229 with the US Army Research Institute for the Behavioral and Social Sciences (ARI). Dr. David W. Bessemer was the Contracting Officer's Technical Representative and provided administrative assistance and guidance.

## TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION . . . . .	1
Purpose . . . . .	1
PROCEDURE . . . . .	1
TANK TEAM OPERATIONS . . . . .	1
Analysis of Tank Team Operations . . . . .	2
TANK PLATOON OPERATIONS . . . . .	3
Analysis of Tank Platoon Operations . . . . .	4
 APPENDIXES	
A. Abbreviations and Symbols Used in Diagrams and Flow Charts . . .	5
B. Tank Team Operation Outline . . . . .	9
C. Tank Team Mission Hierarchy . . . . .	11
D. Tank Team Time Line Mission Sequence . . . . .	13
E. Tank Team Operation Stimuli - Decision - Response Flow Diagrams . . . . .	15
F. Tank Platoon Mission Hierarchies . . . . .	60
G. Tank Platoon Time Line Mission Sequence . . . . .	64
H. Tank Platoon Operation Stimuli - Decision - Response Flow Diagrams . . . . .	69
 TABLES	
A-1. Abbreviations for Team Operations and Platoon Operations Stimuli - Decision - Response Flow Diagrams . . . . .	6
H-1. Tank Platoon/Crew Drill Symbols . . . . .	70
 FIGURES	
A-1. Symbols Legend . . . . .	8
B-1. Tank Team Operation Outline . . . . .	10
C-1. Tank Team Mission Hierarchy . . . . .	12
D-1. Tank Team Time Line Mission Sequence . . . . .	14

	<u>Page</u>
E-1. Tank Team Operation: Movement to Contact; Stimuli - Decision - Response Flow Diagram . . . . .	16
E-2. Tank Team Operation: Hasty Attack; Stimuli - Decision - Response Flow Diagram . . . . .	19
E-3. Tank Team Operation: Bypass; Stimuli - Decision - Response Flow Diagram . . . . .	21
E-4. Tank Team Operation: Holding; Stimuli - Decision - Response Flow Diagram . . . . .	23
E-5. Tank Team Operation: Deliberate Attack; Stimuli - Decision - Response Flow Diagram . . . . .	25
E-6. Tank Team Operation: Exploitation and Pursuit; Stimuli - Decision - Response Flow Diagram . . . . .	29
E-7. Tank Team Operation: Occupy Battle Position; Stimuli - Decision - Response Flow Diagram . . . . .	30
E-8. Tank Team Operation: Defend Battle Position; Stimuli - Decision - Response Flow Diagram . . . . .	34
E-9. Tank Team Operation: Displace to Alternate Battle Position; Stimuli - Decision - Response Flow Diagram . . . . .	38
E-10. Tank Team Operation: Withdraw; Stimuli - Decision - Response Flow Diagram . . . . .	39
E-11. Tank Team Operation: Delay; Stimuli - Decision - Response Flow Diagram . . . . .	41
E-12. Tank Team Operation: Counterattack; Stimuli - Decision - Response Flow Diagram . . . . .	45
E-13. Tank Team Operation: Occupy Rear Assembly Area; Stimuli - Decision - Response Flow Diagram . . . . .	46
E-14. Tank Team Operation: Occupy Forward Assembly Area; Stimuli - Decision - Response Flow Diagram . . . . .	49
E-15. Tank Team Operation: Plan Offensive Operations; Stimuli - Decision - Response Flow Diagram . . . . .	50
E-16. Tank Team Operation: Plan Defensive Operations; Stimuli - Decision - Response Flow Diagram . . . . .	52
E-17. Tank Team Operation: Administrative Road March; Stimuli - Decision - Response Flow Diagram . . . . .	53
E-18. Tank Team Operation: Tactical Road March; Stimuli - Decision - Response Flow Diagram . . . . .	55

	<u>Page</u>
E-19. Tank Team Operation: Tactical Movement; Stimuli - Decision - Response Flow Diagram . . . . .	56
E-20. Tank Team Operation: Consolidate on Objective; Stimuli Decision - Response Flow Diagram . . . . .	57
E-21. Tank Team Operation: Reorganize; Stimuli - Decision - Response Flow Diagram . . . . .	59
F-1. Tank Platoon Offense Mission Hierarchy . . . . .	61
F-2. Tank Platoon Defense Mission Hierarchy . . . . .	62
F-3. Tank Platoon Supporting Mission Hierarchy . . . . .	63
G-1. Tank Platoon Offense Time Line Mission Sequence . . . . .	65
G-2. Tank platoon Defense Time Line Mission Sequence . . . . .	67
H-1. Tank Team Operation: Movement to Contact; Stimuli - Decision - Response Flow Diagram (Tank Platoon) . . . . .	72
H-2. Tank Team Operation: Hasty Attack; Stimuli - Decision - Response Flow Diagram (Tank Platoon) . . . . .	76
H-3. Tank Team Operation: Bypass; Stimuli - Decision - Response Flow Diagram (Tank Platoon) . . . . .	79
H-4. Tank Team Operation: Holding; Stimuli - Decision - Response Flow Diagram (Tank Platoon) . . . . .	82
H-5. Tank Team Operation: Deliberate Attack; Stimuli - Decision - Response Flow Diagram (Tank Platoon) . . . . .	86
H-6. Tank Team Operation: Exploitation and Pursuit; Stimuli - Decision - Response Flow Diagram (Tank Platoon) . . . . .	92
H-7. Tank Team Operation: Occupy Battle Position; Stimuli - Decision - Response Flow Diagram (Tank Platoon) . . . . .	93
H-8. Tank Team Operation: Defend Battle Position; Stimuli - Decision - Response Flow Diagram (Tank Platoon) . . . . .	98
H-9. Tank Team Operation: Displace to Alternate Battle Position; Stimuli - Decision - Response Flow Diagram (Tank Platoon) . . . . .	103
H-10. Tank Team Operation: Withdraw; Stimuli - Decision Response Flow Diagram (Tank Platoon) . . . . .	104
H-11. Tank Team Operation: Delay; Stimuli - Decision Response Flow Diagram (Tank Platoon) . . . . .	107

H-12. Tank Team Operation: Counterattack; Stimuli - Decision - Response Flow Diagram (Tank Platoon) . . . . .	114
H-13. Tank Team Operation: Occupy Rear Assembly Area; Stimuli - Decision - Response Flow Diagram (Tank Platoon) . .	115
H-14. Tank Team Operation: Occupy Forward Assembly Area; Stimuli - Decision - Response Flow Diagram (Tank Platoon) . .	118
H-15. Tank Team Operation: Plan Offensive Operations; Stimuli - Decision - Response Flow Diagram (Tank Platoon) . .	119
H-16. Tank Team Operation: Plan Defensive Operations; Stimuli - Decision - Response Flow Diagram (Tank Platoon) . .	122
H-17. Tank Team Operation: Administrative Road March; Stimuli - Decision - Response Flow Diagram (Tank Platoon) . .	123
H-18. Tank Team Operation: Tactical Road March; Stimuli - Decision - Response Flow Diagram (Tank Platoon) . . . . .	126
H-19. Tank Team Operation: Tactical Movement; Stimuli - Decision - Response Flow Diagram (Tank Platoon) . . . . .	127
H-20. Tank Team Operation: Consolidage on Objective; Stimuli - Decision - Response Flow Diagram (Tank Platoon) . . . . .	128
H-21. Tank Team Operation: Reorganize; Stimuli - Decision - Response Flow Diagram (Tank Platoon) . . . . .	131

## INTRODUCTION

The diagrams and flow charts contained in this volume were developed during an analysis of armor operations. A detailed description of the analysis is contained in Volume I of this report. The abbreviations and symbols used in the diagrams and flow charts are shown in Appendix A.

### Purpose

The purpose of the analysis of armor operations was to identify, classify, and interrelate the activities performed during tank platoon missions. A mission was defined as a specific goal that was assigned to a military unit by the commander of the unit at the next higher echelon. Since the number of such goals was assumed to be inherently large, it was concluded that the number of platoon missions was too extensive to serve as the focal point for the analysis. The first step in the analysis, therefore, was to identify the categories or clusters of activities that normally occur during the performance of these missions. Six such categories were identified--offense, defense, assembly areas, plan operations, conduct movement, and sustaining operations. These categories were labeled "mission phases" since the clusters occur at different times and represent different stages of mission performance. The four mission phases pertaining to activities conducted in support of offense and defense (i.e., assembly areas, plan operations, conduct movement, and sustaining operations) were collectively referred to as the "supporting mission phases".

### PROCEDURE

The analysis of armor operations focused on a tank team containing armor and infantry platoons. Since missions are assigned to platoons by the team commander to facilitate the performance of the team mission, it was concluded that the analysis of platoon operations must begin with an analysis of team operations. The strategy was to first identify the team operations that are normally performed during each mission phase. Once these were identified, the next step was to identify the platoon operations normally occurring during each team operation. Each platoon operation was then further examined to identify the platoon leader activities and the platoon tasks that would normally occur during that operation.

### TANK TEAM OPERATIONS

The Tank Team Operation Outline in Appendix B shows the combat organization of the tank team and the team operations that were identified during an examination of FM 71-1, The Tank and Mechanized Infantry Company Team. In addition, the figure shows the interface between tactical team operations (i.e., tank team operations that are performed during either the offensive or defensive mission phases) and supporting team operations (i.e., tank team operations that are performed during one of the four supporting mission phases).

Each team operation is identified in the figure contained in Appendix B and in the figures presented in the other Appendixes by its name and a code. The code contains a letter representing the mission phase in which the operation occurs, and a digit arbitrarily assigned to each team operation occurring during the mission phase. The correspondence between the letters and the mission phases is as follows: O - Offense; D - Defense; A - Assembly Areas; P - Plan Operations; M - Conduct Movement; and S - Sustaining Operations.

Once the team operations were identified, the description of the conduct of each operation was examined to identify its phases. A team operation phase represents a cluster of activities that occur during different stages of a team operation. While some activities may occur during two or more phases of a team operation, the combination of activities performed during each phase tend to be unique and are intended to accomplish different subgoals.

The Tank Team Mission Hierarchy in Appendix C is an outline of the team operations and the team operation phases that occur during each mission phase. Each team operation phase is identified by name and by code. The code for each team operation phase was generated by arbitrarily assigning an additional digit to the code for the team operation of which it was a part.

The Tank Team Time Line Mission Sequence in Appendix D is a diagram summarizing the order in which the team operations are likely to occur in combat.

#### Analysis of Tank Team Operations

Once the team operations and their phases were identified, an analysis was made of the activities that occur during each operation. The focal point of this analysis was the team commander. From the descriptions of team operations, the command, control, and communications functions of the team commander were identified and placed into the sequence in which they would normally occur. The types of stimuli initiating each leadership act were derived from consideration of the combat situation. Team tasks were then identified by determining the specific activities that would result from each command issued by the team commander.

The results of the analysis of team operations are summarized in a series of flow charts contained in Appendix E. Each flow chart shows the order in which the activities performed by the team and the team commander would normally occur during a team operation. The name of the team operation is shown near the start of the flow chart. It is preceded by the name of the team operation that is most likely to occur immediately before it. Following the name of the team operation is the initiating stimulus which causes the operation to begin. Only three initiating stimuli are possible--a team operations order issued by the battalion commander, a team operations order issued by the team commander, and a frag order issued by the team commander. The initiating stimulus is followed by a decision which must be made by the team commander. The alternate decisions are then shown. Each decision is followed by one of

three different alternatives. Some decisions are followed by commands, some by leader actions, and some by no commands or actions. The commands and team leader actions are shown on the flow charts when they occur. A command is followed in turn by the team task which is performed as a result of the command. At this point the sequence is repeated beginning with the stimulus for the next decision. It should be noted that the specific stimulus preceding each decision is not given. Instead the flow charts contain the stimulus categories that initiate the next decision. The categories are identified using the METT system in which M refers to different aspects of the mission, E to characteristics of the enemy, the first T to terrain and weather, and the second T to troops available. To avoid confusion whenever either one of the last two categories appeared without the other, TR was used in the flow charts to designate terrain and weather, while TP was used to designate troops available. The team operation most likely to follow the operation is shown at the end of each flow chart.

### TANK PLATOON OPERATIONS

After the team operations and their phases were identified, the analysis was continued by examining the activities that occur at the platoon level. Descriptions of team operations were reviewed to identify the platoon operations that are conducted during each team operation phase. A platoon operation was defined as a coordinated set of activities that could be performed by a single tank platoon that would enable the platoon to accomplish the goal assigned to it by the team commander. The descriptions of the team operations indicated that some platoon operations could be performed by themselves with all of the tanks platoons in the tank team operating together. Some platoon operations could not be performed by themselves, but only in conjunction with other platoon operations. When two platoon operations are performed simultaneously, each by different platoons, a name was assigned to the type of platoon (or platoons) conducting each of the separate operations.

A series of three Tank Platoon Mission Hierarchies is contained in Appendix F. These are outlines of the platoon operations that occur in each team operation and team operation phase during the offensive, defensive, and supporting mission phases. Each platoon operation is identified by name and by code. The code for a platoon operation was generated by arbitrarily assigning an additional digit to the code for the team operation phase during which it is conducted. Platoon operations that could be performed by all of the platoons in the team are indicated by the letter P below the name of the operation. For each platoon operation requiring coordination with another, an abbreviation is given for the type of platoon(s) that would perform the operation.

Two Tank Platoon Time Line Mission Sequences are contained in Appendix G. These diagrams summarize the order in which the team operations, team operation phases, and platoon operations are likely to occur during the offensive and defensive mission phases.

## Analysis of Tank Platoon Operations

The results of the analysis of platoon operations are summarized in a series of flow charts contained in Appendix H. Each flow chart shows the order in which the activities performed by the platoon and the platoon leader would normally occur during each team operation. The activities are shown in a single column for the team operations in which there are no coordinated platoon operations. During team operations that do require coordinated platoon operations, the activities are shown in parallel columns with each column containing the activities that are conducted during a different team operation phase.

On each flow chart, the name of the team operation is preceded by the name of the team operation that is most likely to occur immediately before it. Following the name of the team operation is the initiating stimulus which causes the team operation to begin. This is followed by the name of the team operation phase and the name of the platoon operation whose activities are being shown. The sequence of activities shown for platoon operations is the same of that shown earlier for team operations except that the leadership activities pertain to the platoon leader and the tasks are platoon tasks. Linked to each platoon leader command is a code number designating a leadership, platoon, or crew drill that can be used to train skills required to perform the leadership task exhibited by the platoon leader or the crew and platoon skills necessary to perform the platoon task. Some of the drills are already in existence, while others remain to be developed. Table H-1 in Appendix G lists the titles of these drills and the sources in which the existing drills can be found. Also indicated on the flow charts is the mode of communication by which the platoon leader would issue his command.

The diagrams and charts contained in this volume represent graphic illustrations of the derivation of platoon and platoon leader tasks emanating from tank team operations. Additional details on the derivation of these tasks can be obtained in Volumes I, III, and V of this report.

**APPENDIX A**

**ABBREVIATIONS AND SYMBOLS LEGEND**

TABLE A-1: ABBREVIATIONS FOR TEAM OPERATIONS AND  
PLATOON OPERATIONS STIMULI - DECISION - RESPONSE FLOW DIAGRAMS

AA - Assembly Area	F&M - Fire and Maneuver
ACCEL - Acceleration	FLD FIRE - Fields of Fire
ADJ - Adjusted	FLNK - Flank
AFTER-OPS - After Operations	FO - Forward Observer
ALTERN - Alternate	FORM - Formation
ANC - Announce	FOR OBSERVER - Forward Observer
APP - Approach	FRAGO - Frag Order
APPROP - Appropriate	FWD - Forward
ARTY - Artillery	G D - Gunnery Drill
ASSGND - Assigned	GD - Good
ASSLT - Assault	GND - Ground
ATK - Attack	GRDS - Guards
AVAIL - Available	HAW - Heavy Anti-Tank Weapons
AVE - Avenue	HRBONE - Herringbone
BETWN - Between	IC - Intercommunications
B D - Battle Drill	ID - Indirect
BNDG - Bounding	IDF - Indirect Fires
B-OP - Breaching Operation	ILLUM - Illumination
BRCH - Breach	IMM - Immediate
BTL - Battle	IND - Individual
CHKS - Checks	INEFFEC - Ineffective
CNT - Contact	INF - Infantry
COMMO - Communications	INIT - Initiated
COMP - Complete	INST - Installed
CON - Conduct	INT - Interval
CONT - Continue	IWD - Initial Withdrawing
COORD - Coordinate	IWP - Initial Withdrawing Platoon
COR - Correct	LD - Line of Departure
CORRECTD - Corrected	LP - Lead Platoon
COUNTERATK - Counterattack	M - Mission
COV - Covering	MAINT - Maintenance
CP - Critical Point	MAINTD - Maintained
CRIT - Critical	MASS - Massed
CRSG - Crossing	MAX - Maximum
DEF - Defense	METR - Mission, Enemy, Terrain
DEFIL - Defilade	METT - Mission, Enemy, Terrain, Troops
DELVD - Delivered	MNVR - Maneuver
DEPL - Deployed	MO - Mission Order
DESGNTD - Designated	M-TR - Mission, Terrain
DESTRYD - Destroyed	MVD - Moved
DIR - Direct	MVT - Movement
DISENGD - Disengaged	OBSER - Observation
DISPLACE - Displacement	OBST - Obstacle
DISTRIB - Distribute	OCCUPYS - Occupies
DPTH - Depth	OLAPNG - Overlapping
EFFEC - Effective	OPNL - Operational
ELEMTS - Elements	OPORD - Operation Order
EMERG - Emergency	OPP - Opportunity
EN - Enemy	ORD - Ordered
ENGD - Engaged	ORG - Organize
ESTAB - Established	ORGANZD - Organized

TABLE A-1. CONTINUED.

OWATCH - Overwatch	TECH - Technique
PERFD - Performed	TER - Terrain
PERM - Permission	TNK - Tank
PERS - Personnel	TF - Task Force
PHS - Phase	TGTS - Targets
PLAT - Platoon	TM - Team
PLS-D - Platoon Leader/Sergeant Drill	TNTV - Tentative
POS - Position	TRAV - Traveling
PSBL - Possible	TUR - Turret
PREPS - Preparations	WD - Withdraw
PRES - Present	W/DRAW - Withdrawal
PREV - Previous	W/OTH - With Other
PROP - Proper	WPNS - Weapons
PROT - Protective	
PROV - Provided	
PTS - Points	
QURTG - Quartering	
RD - Road	
RDNS - Readiness	
RECD - Received	
RECON - Reconnaissance	
REESTAB - Reestablish	
REL - Release	
REORGAN - Reorganize	
REPOS - Reposition	
REQ - Request	
REV - Reverse	
RMNG - Remaining	
RP - Range Point	
RPTD - Reported	
RPTS - Reports	
RTS - Routes	
SCHED - Scheduled	
SEC - Security	
SEL - Selected	
SF - Suppressive Fires	
SIT - Situation	
SP - Starting Point	
SPEC - Specified	
ST PT - Starting Point	
SUB - Subsequent	
SUBS - Subsiding	
SUC - Successive	
SUP - Support	
SUPP - Suppressive	
SURP - Surprise	
SURVEIL - Surveillance	
SUR-D - Survival Drill	
SUS-D - Sustaining Drill	
SUST - Sustaining	



APPENDIX B

TANK TEAM OPERATIONS OUTLINE



APPENDIX C

TANK TEAM MISSION HIERARCHY

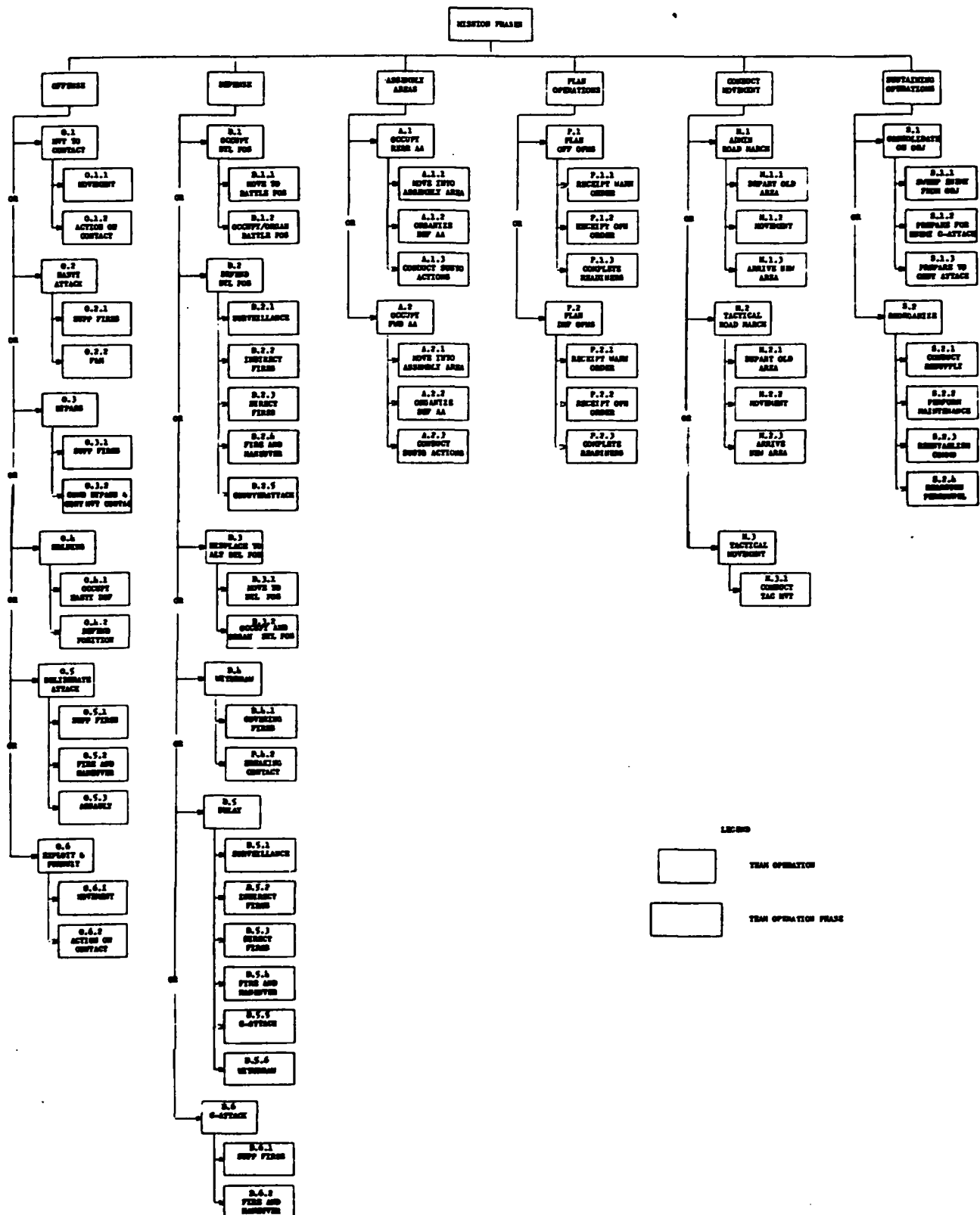


FIGURE C-1. TANK TEAM MISSION HIERARCHY

APPENDIX D

TANK TEAM TIME LINE MISSION SEQUENCE



APPENDIX E

TANK TEAM OPERATION FLOW DIAGRAMS

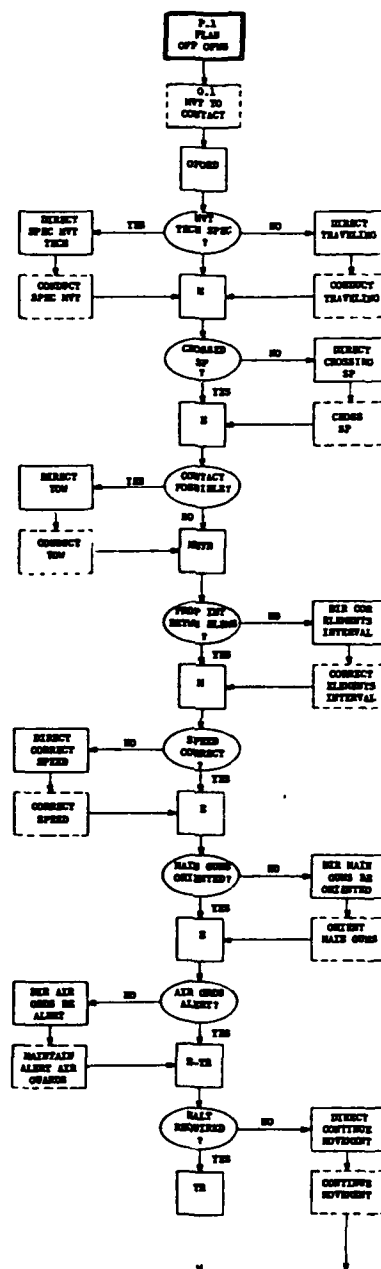


FIGURE E-1. TANK TEAM OPERATION: MOVEMENT TO CONTACT; STIMULI - DECISION - RESPONSE FLOW DIAGRAM

Figure E-1 Continued on Page 17

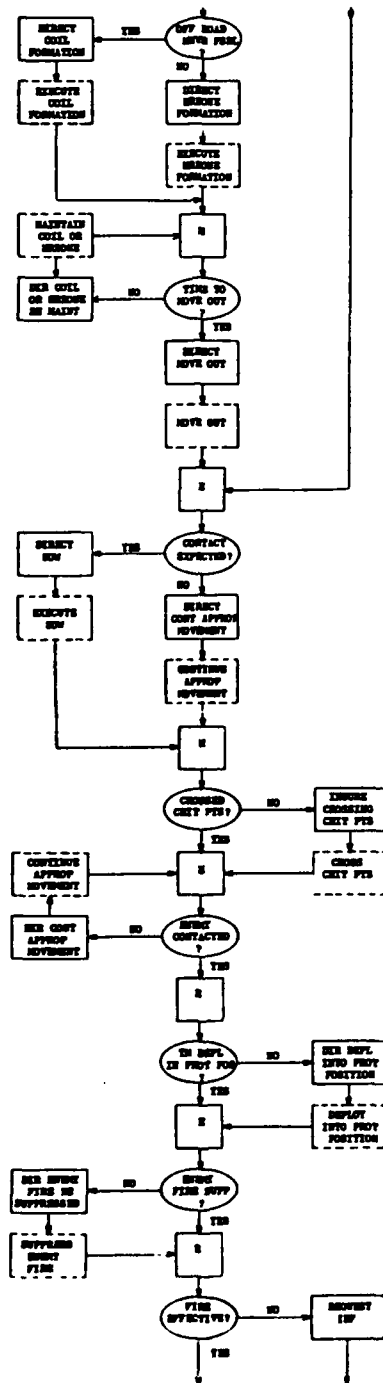


Figure E-1 Continued

Figure E-1 Continued on Page 18

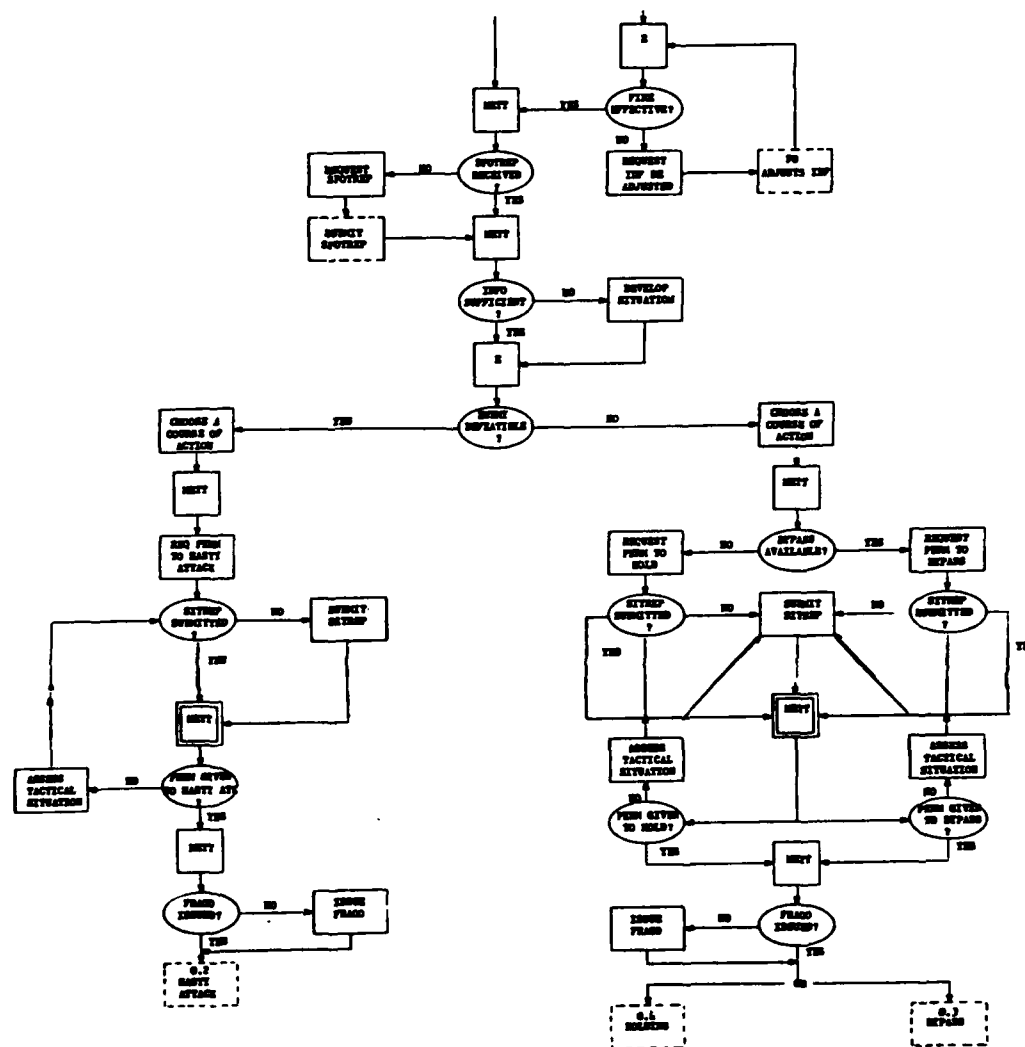
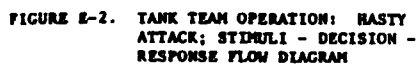
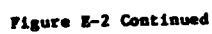


Figure E-1 Continued



19





21







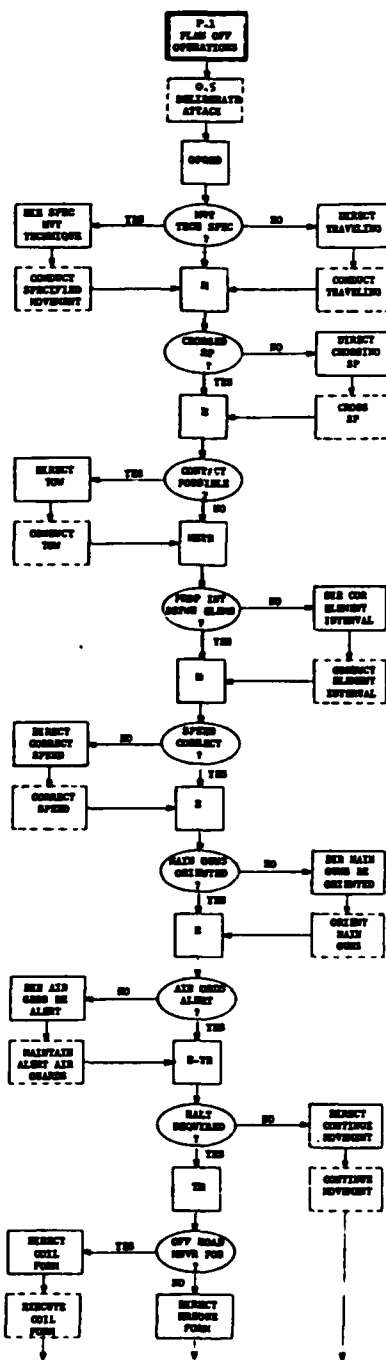


FIGURE E-5. TANK TEAM OPERATION: DELIBERATE ATTACK; STIMULI - DECISION - RESPONSE FLOW DIAGRAM

Figure E-5 Continued on Page 26



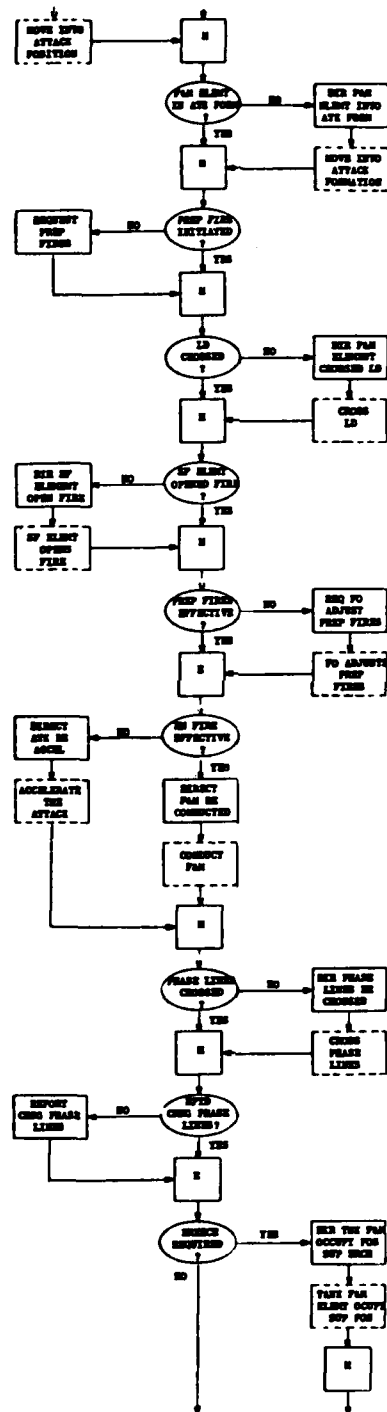


Figure E-5 Continued

Figure E-5 Continued on Page 28



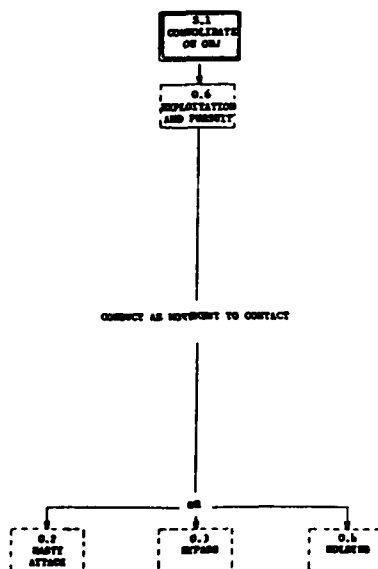


FIGURE E-6. TANK TEAM OPERATION:  
EXPLOITATION AND PURSUIT;  
STIMULI - DECISION - RESPONSE  
FLOW DIAGRAM

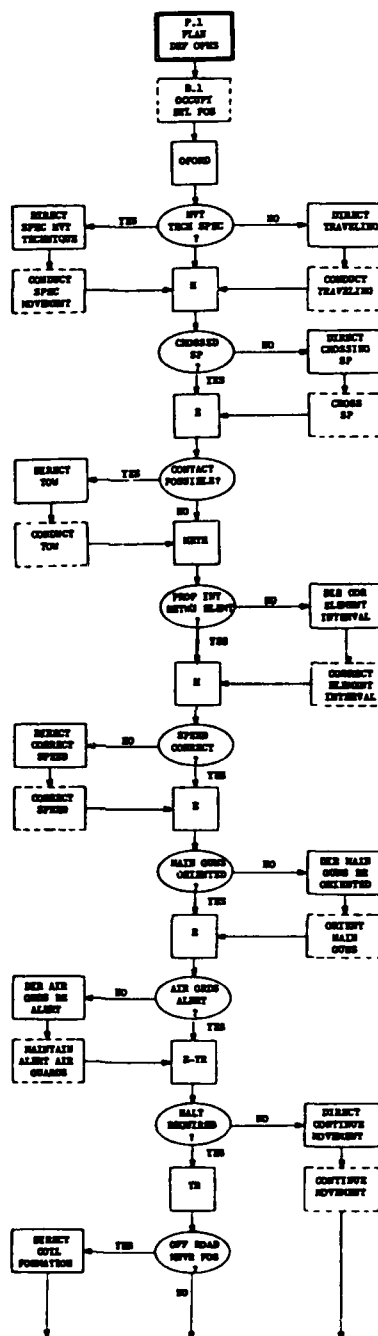


FIGURE E-7. TANK TEAM OPERATION: OCCUPY BATTLE POSITION; STIMULI - DECISION - RESPONSE FLOW DIAGRAM

Figure E-7 Continued on Page 31

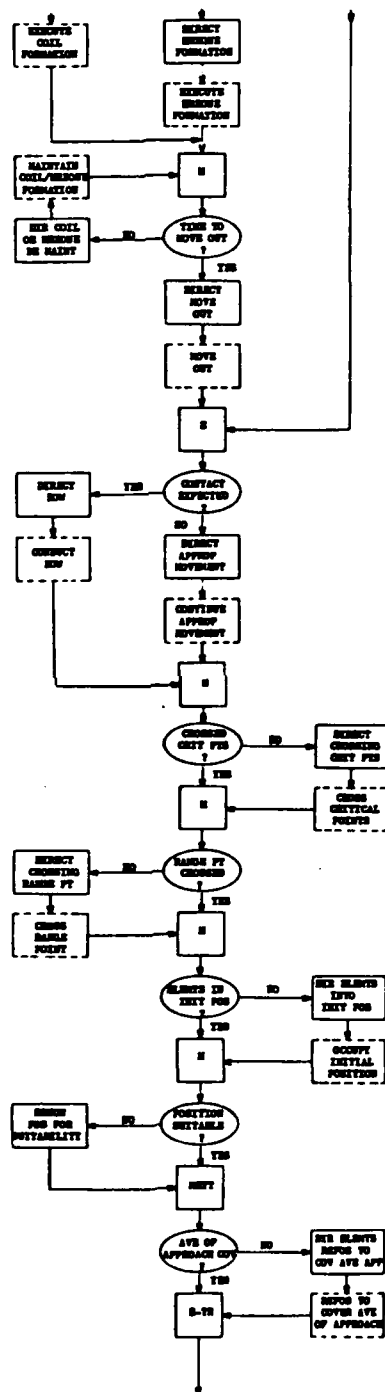


Figure E-7 Continued

Figure E-7 Continued on Page 32

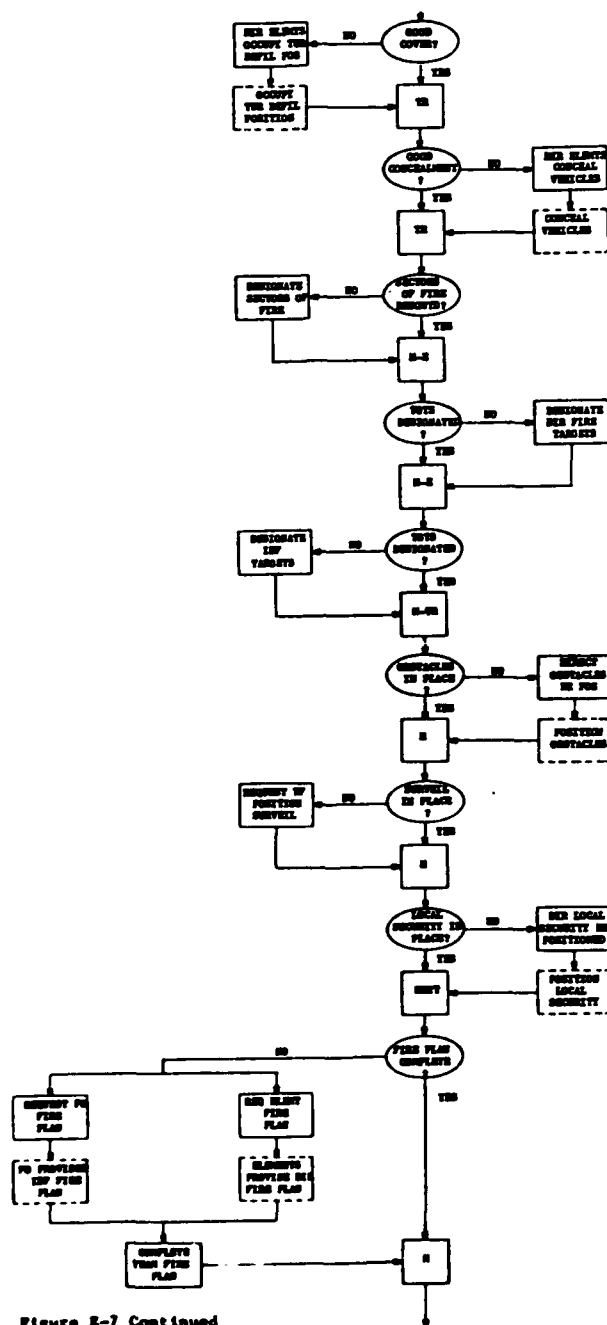
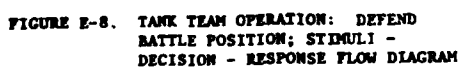


Figure E-7 Continued

Figure E-7 Continued on Page 33





34

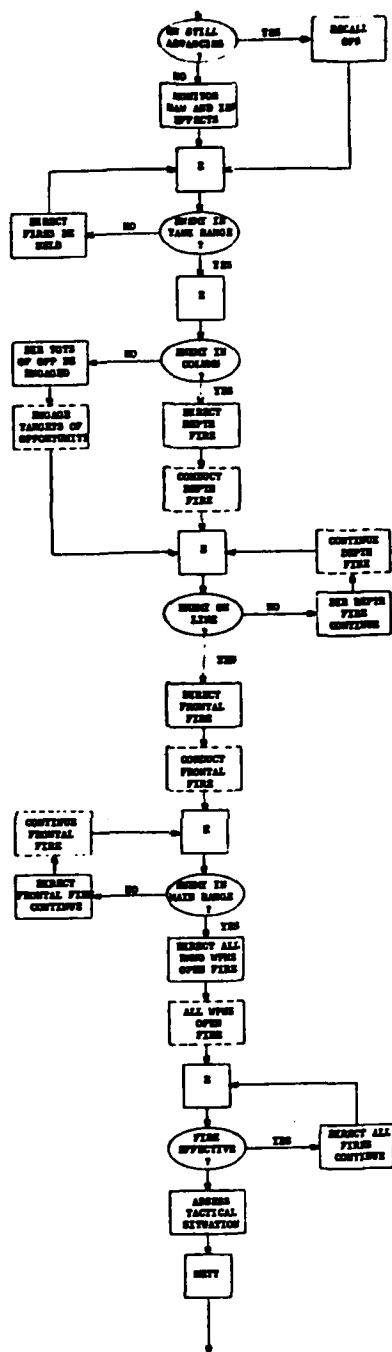


Figure E-8 Continued

Figure E-8 Continued on Page 36



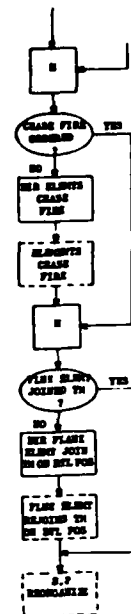
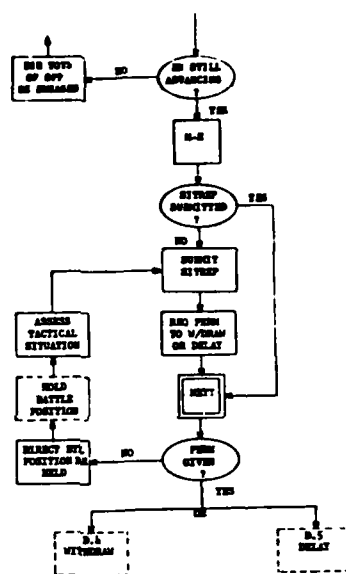


Figure E-8 Continued

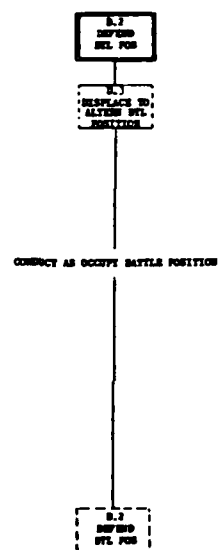


FIGURE E-9. TANK TEAM OPERATION: DISPLACE TO ALTERNATE BATTLE POSITION; STIMULI - DECISION - RESPONSE FLOW DIAGRAM



39

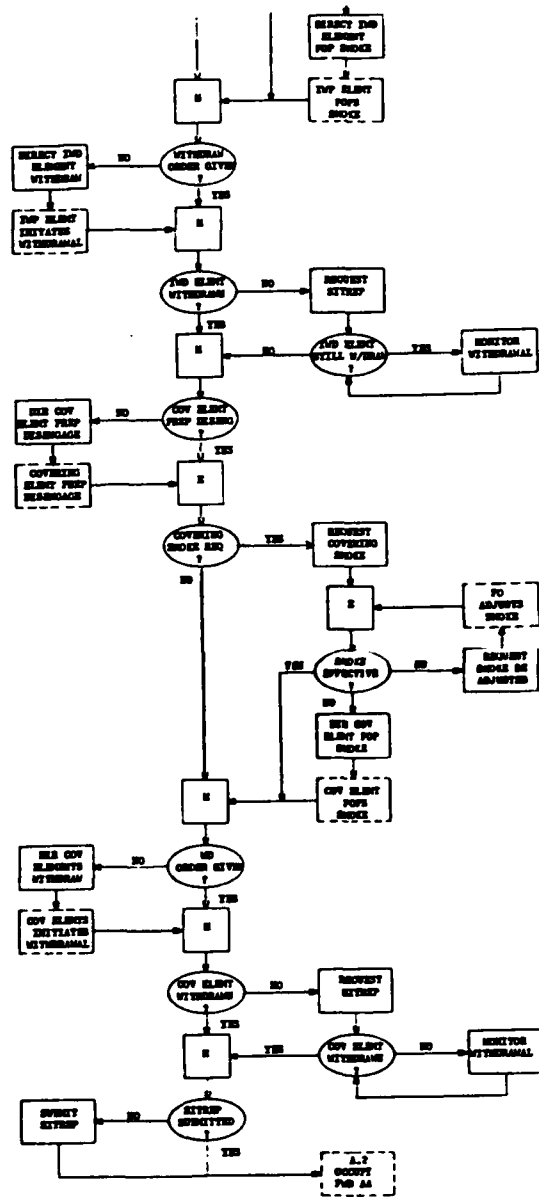
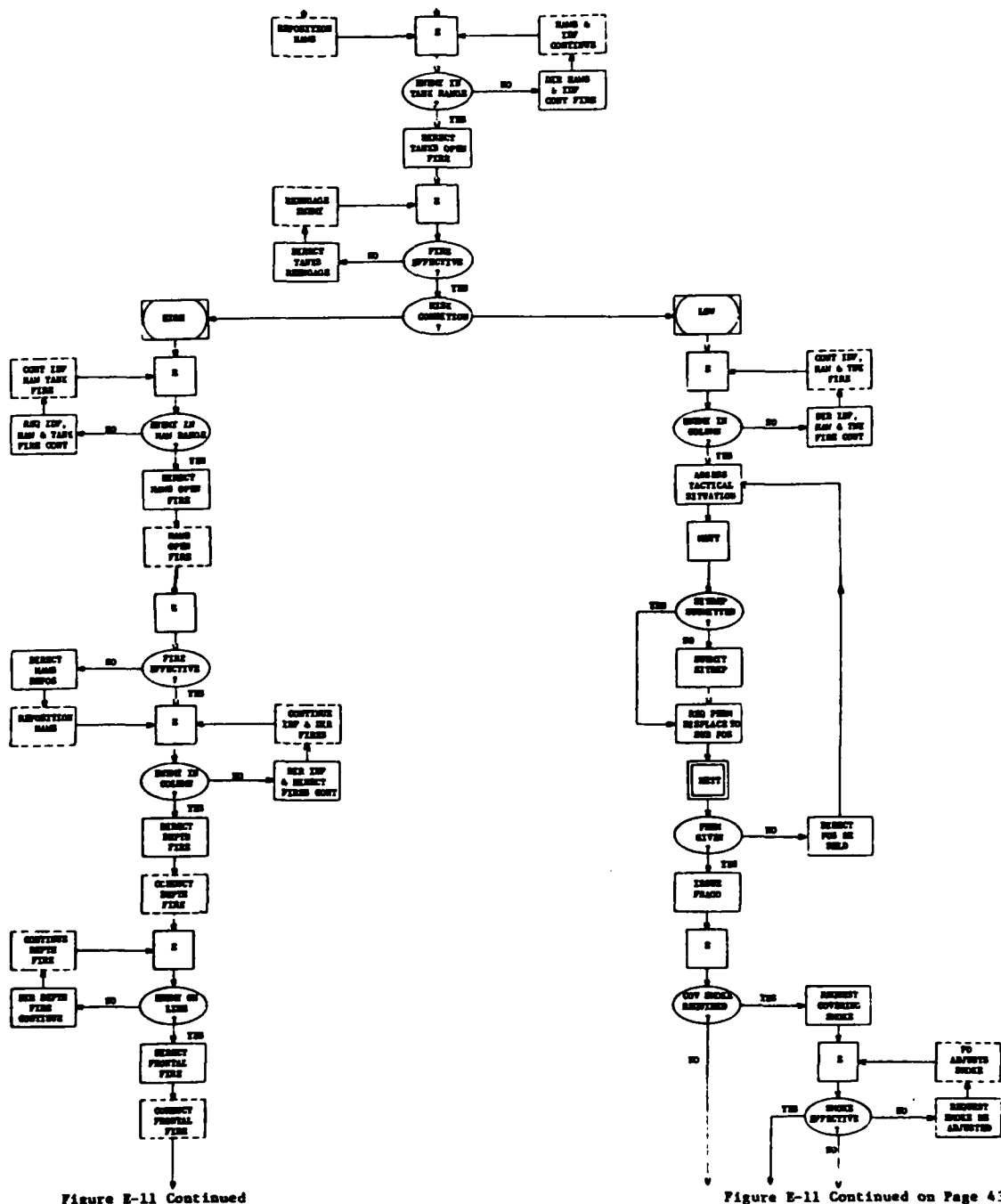
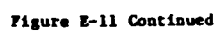


Figure E-10 Continued









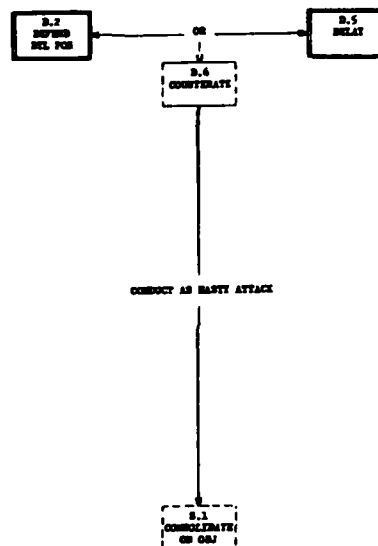


FIGURE E-12. TANK TEAM OPERATION:  
COUNTERATTACK; STIMULI -  
DECISION - RESPONSE FLOW  
DIAGRAM

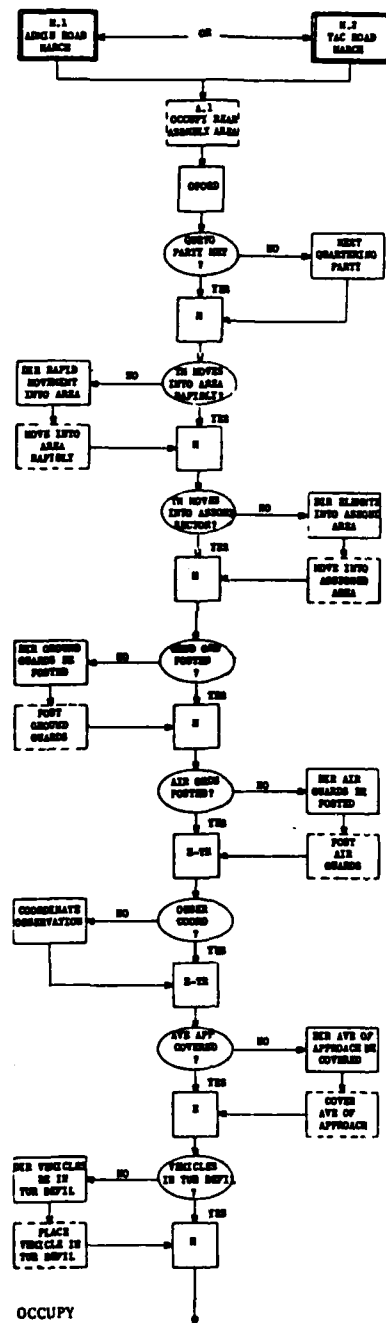


FIGURE E-13. TANK TEAM OPERATION: OCCUPY REAR ASSEMBLY AREA; STIMULI - DECISION - RESPONSE FLOW DIAGRAM

Figure E-13 Continued on Page 47

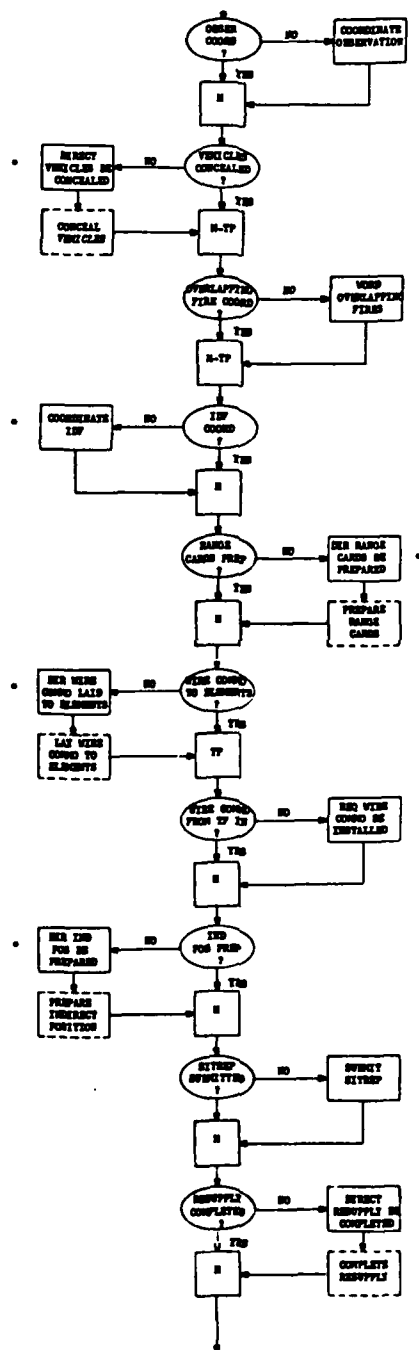
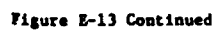


Figure E-13 Continued

Figure E-13 Continued on Page 48



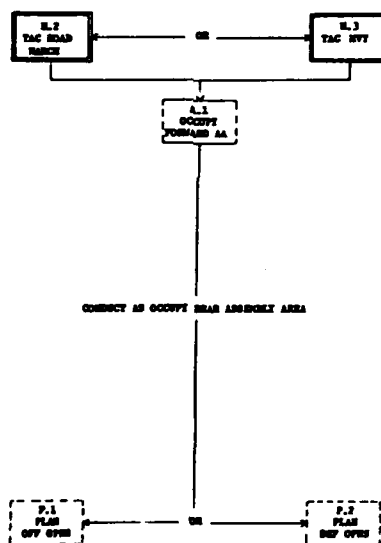


FIGURE E-14. TANK TEAM OPERATION: OCCUPY FORWARD ASSEMBLY AREA; STIMULI - DECISION - RESPONSE FLOW DIAGRAM

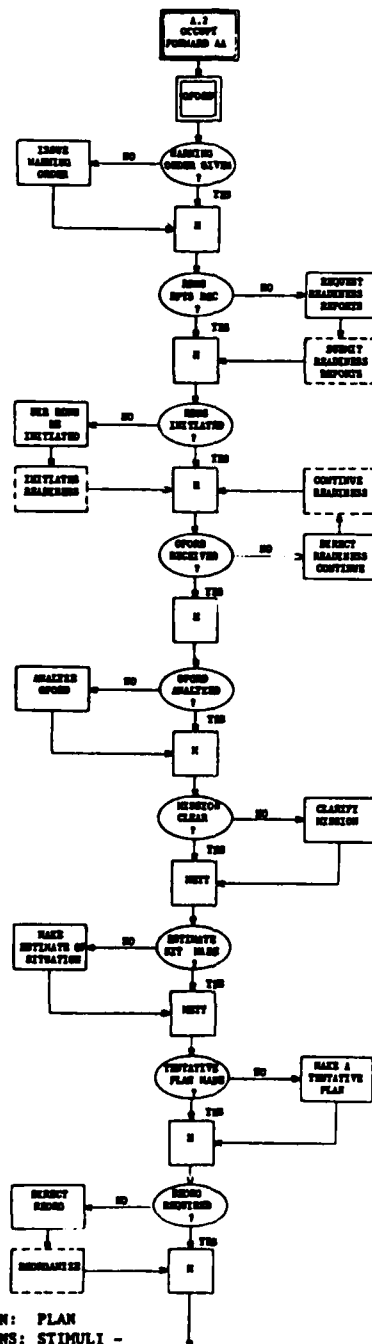


FIGURE E-15. TANK TEAM OPERATION: PLAN OFFENSIVE OPERATIONS; STIMULI - DECISION - RESPONSE FLOW DIAGRAM

Figure E-15 Continued on Page 51

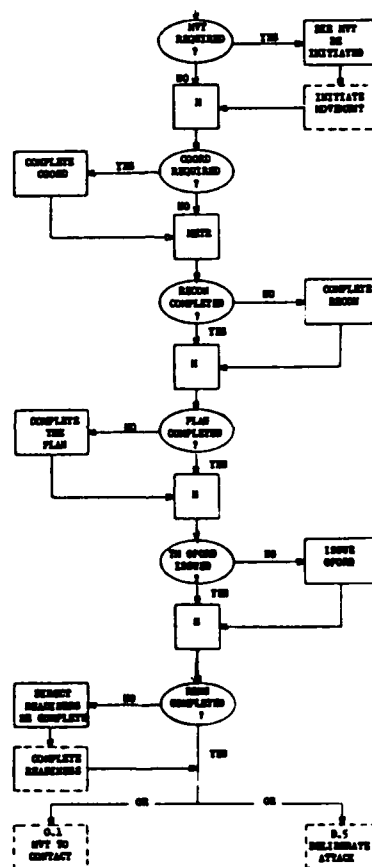


Figure E-15 Continued

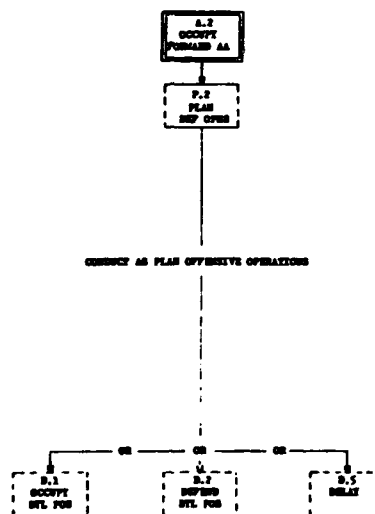


FIGURE E-16. TANK TEAM OPERATION: PLAN  
DEFENSIVE OPERATIONS; STIMULI -  
DECISION - RESPONSE FLOW DIAGRAM

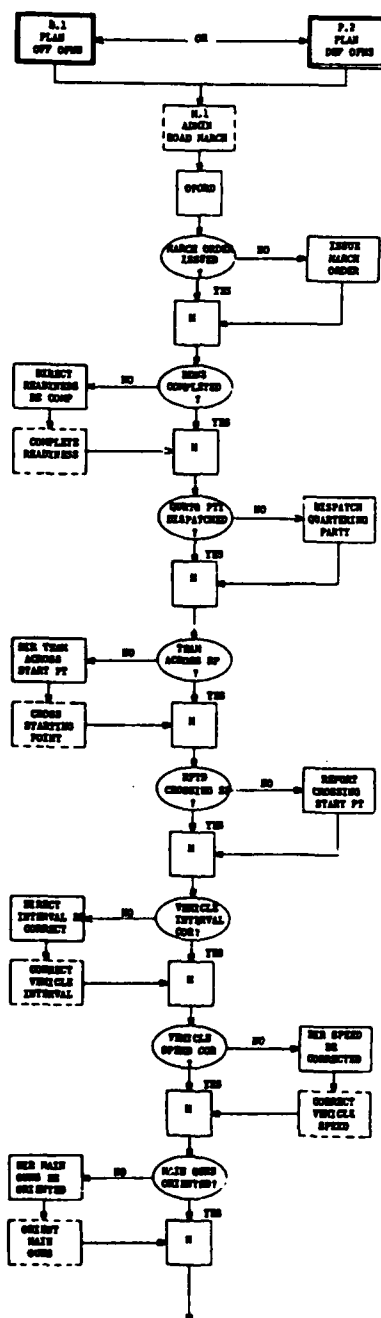


FIGURE E-17. TANK TEAM OPERATION:  
ADMINISTRATIVE ROAD MARCH; STIMULI -  
DECISION - RESPONSE FLOW DIAGRAM

Figure E-17 Continued on Page 54



54

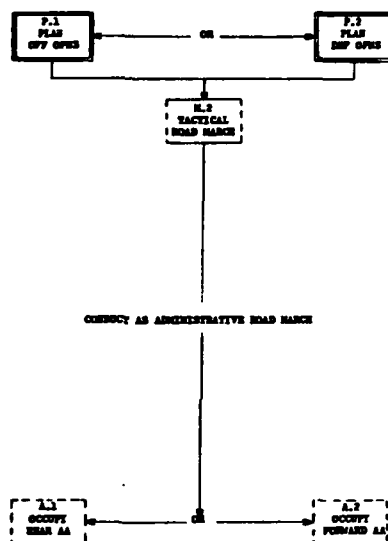


FIGURE E-18. TANK TEAM OPERATION: TACTICAL ROAD MARCH; STIMULI - DECISION - RESPONSE FLOW DIAGRAM

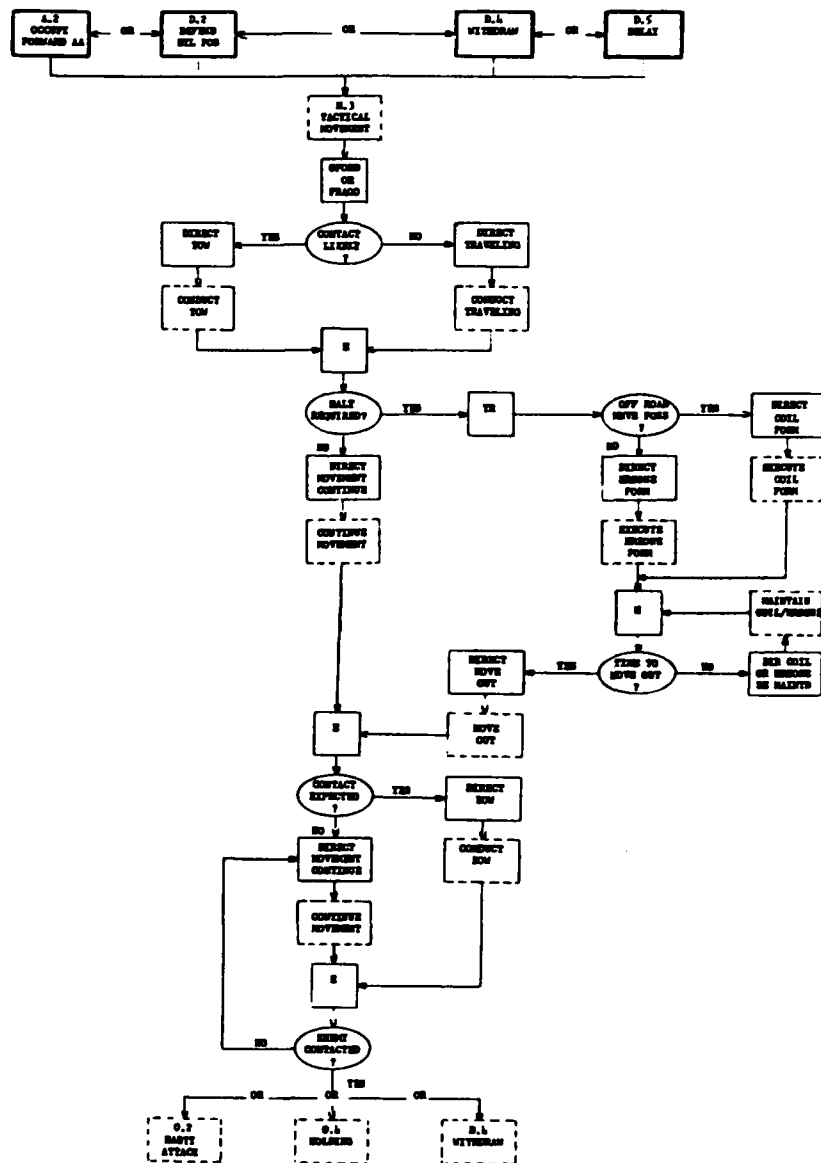


FIGURE E-19. TANK TEAM OPERATION: TACTICAL MOVEMENT; STIMULI - DECISION - RESPONSE FLOW DIAGRAM

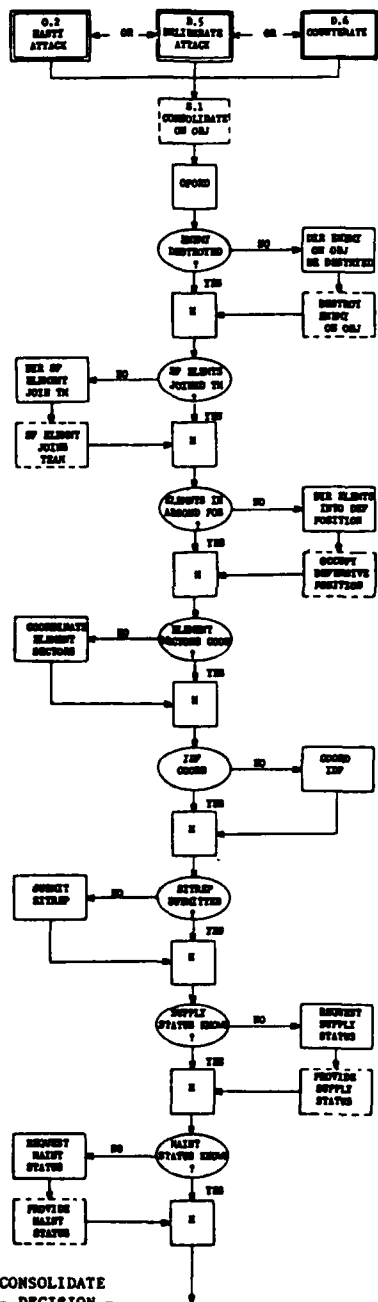


FIGURE E-20. TANK TEAM OPERATION: CONSOLIDATE ON OBJECTIVE; STIMULI - DECISION - RESPONSE FLOW DIAGRAM

Figure E-20 Continued on Page 58

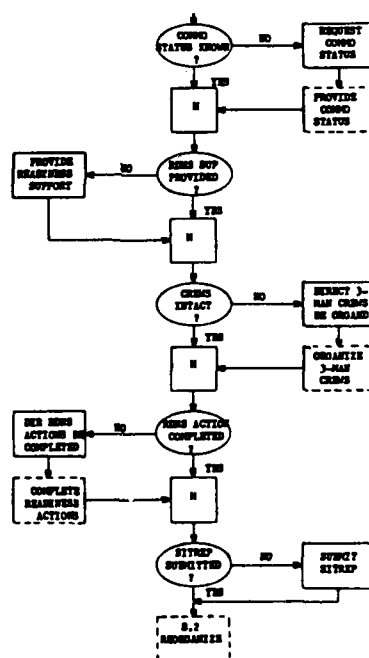


Figure E-20 Continued

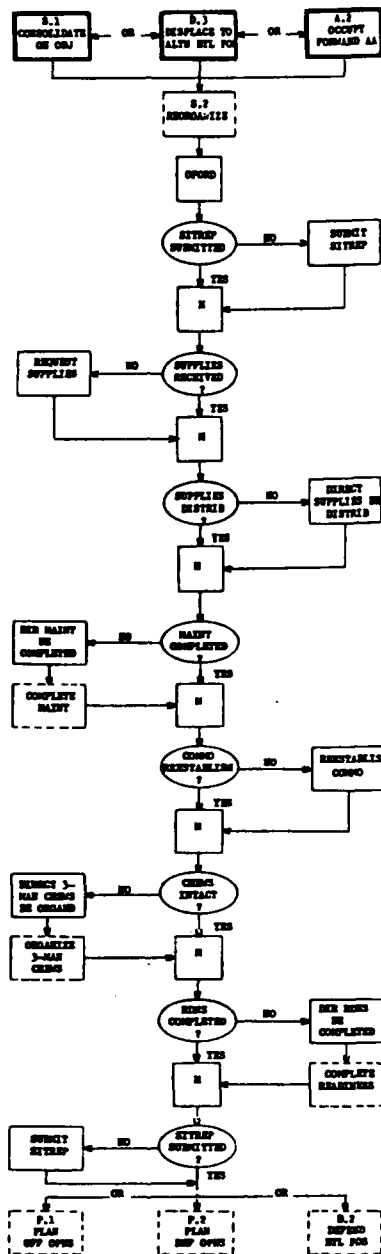


FIGURE E-21. TANK TEAM OPERATION:  
REORGANIZE; STIMULI -  
DECISION - RESPONSE FLOW  
DIAGRAM

APPENDIX F

TANK PLATOON MISSION HIERARCHIES



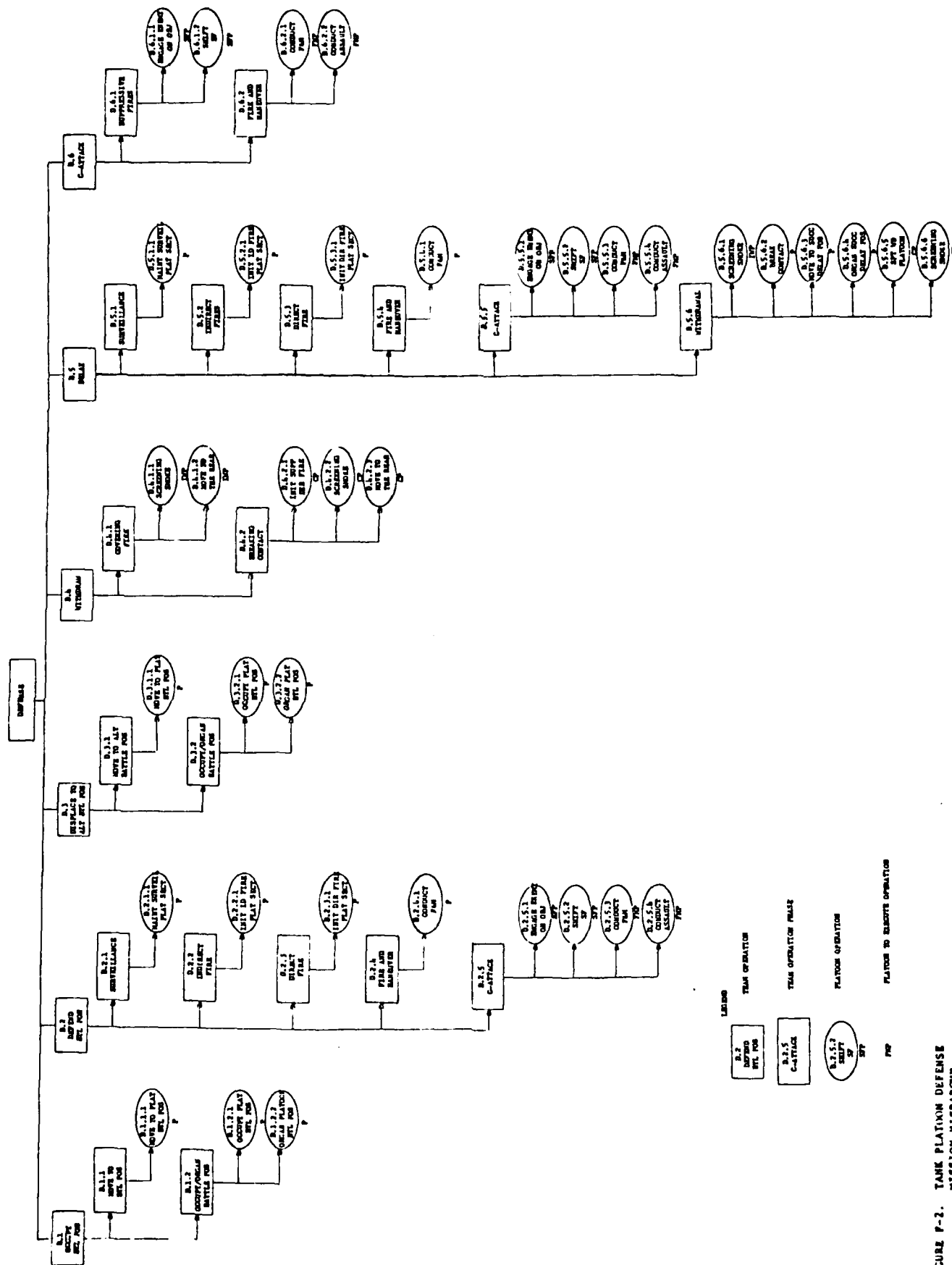


FIGURE P-2. TANK PLATOON DEFENSE MISSION HIERARCHY

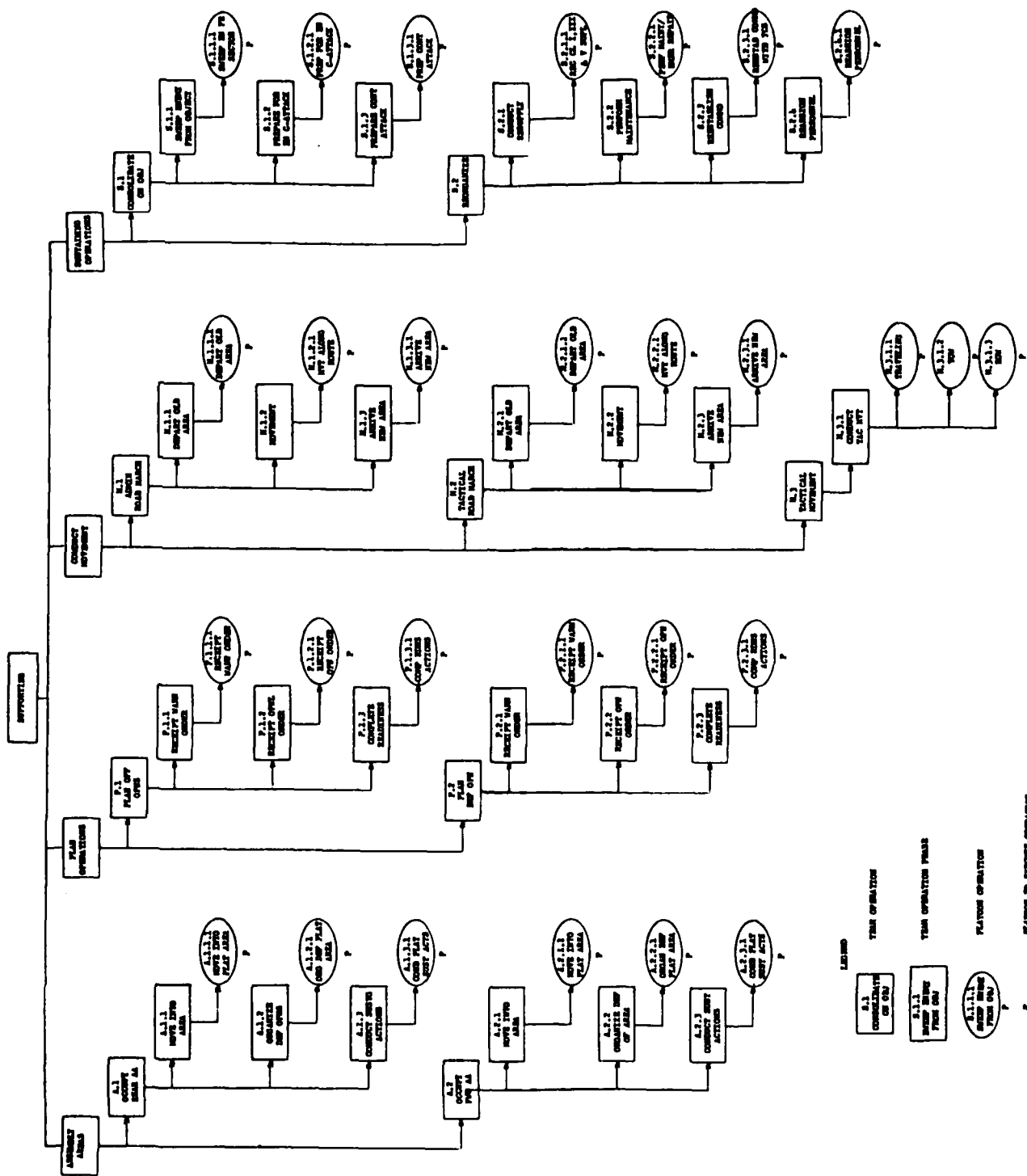


FIGURE 7-3. TANK PLATOON SUPPORTING MISSION HIERARCHY

APPENDIX G

TANK PLATOON TIME LINE MISSION SEQUENCES



Figure C-1 Continued on Page 66







APPENDIX H

TANK PLATOON OPERATION FLOW DIAGRAMS

TABLE H-1. TANK PLATOON/CREW DRILL SYMBOLS

TANK GUNNERY DRILLS (PLATOON)		Reference
TGP-1	Frontal Fire Distribution	XM1-Spt. Pkg. *
TGP-2	Cross Fire Distribution	XM1-Spt. Pkg.
TGP-3	Depth Fire Distribution	XM1-Spt. Pkg.
TGP-4	Offensive Fire Distribution	XM1-Spt. Pkg.
TGP-5	Defensive Fire Distribution	XM1-Spt. Pkg.
-----		
BATTLE DRILLS (PLATOON)		
B-1	Hasty Attack	XM1-Spt. Pkg. *
B-2	Action Front (left, right or rear)	XM1-Spt. Pkg.
B-3	Ambush Reaction	XM1-Spt. Pkg.
B-4	Hasty Defense	XM1-Spt. Pkg.
B-5	Contact With Mines or Obstacles	XM1-Spt. Pkg.
B-6	Attack Through Smoke	New **
B-7	Defend Through Smoke	New
B-8	Consolidate on Objective	New
	a. Eliminate Enemy from Objective	New
	b. Prepare for Counterattack	New
	c. Prepare to Continue the Attack	New
-----		
MOVEMENT DRILLS (PLATOON)		
M-1	Passage Defile, Forest, Urban Area	XM1-Spt. Pkg. *
M-2	Coiling at Unscheduled Halt	XM1-Spt. Pkg.
M-3	Herringbone at Unscheduled Halt	XM1-Spt. Pkg.
M-4	Traveling	XM1-Spt. Pkg.
M-5	Traveling Overwatch	XM1-Spt. Pkg.
M-6	Bounding Overwatch	XM1-Spt. Pkg.
M-7	Assault Formation	XM1-Spt. Pkg.
M-8	Occupying Assembly Area	New **
-----		
SURVIVAL DRILLS (PLATOON AND CREW)		
SUR-1	Nuclear Attack	TC-17-15-1
SUR-2	Nuclear Warning	TC-17-15-1
SUR-3	Protective Mask	TC-17-15-1
SUR-4	Fire Fighting	TC-17-15-1
SUR-5	Wounded Evacuation (TC,GN,LD,DV)	TC-17-15-1
SUR-6	Escape Hatch Evacuation	TC-17-15-1
SUR-7	Camouflage a Tank	TC-17-15-1
SUR-8	Fighting With a Three Man Crew (TC Cas)	RP-79-14
SUR-9	Fighting With a Three Man Crew (GN Cas)	RP-79-14
SUR-10	Fighting With a Three Man Crew (LD Cas)	RP-79-14
SUR-11	Fighting With a Three Man Crew (DV Cas)	RP-79-14
SUR-12	Chemical/Biological Attack	XM1-Spt. Pkg. *

\*Gives titles of drills, but does not have drills

\*\*New-Nonexistent

TABLE H-1. TANK PLATOON/CREW DRILL SYMBOLS (CONT'D)

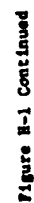
SURVIVAL DRILLS (PLATOON AND CREW, CONT'D)		
		<u>Reference</u>
SUR-13	Protection/Recovery Damaged Vehicle	XMI-Spt. Pkg.
SUR-14	Artillery Reaction	XMI-Spt. Pkg.
SUR-15	Anti-Armor/Anti-Helicopter	XMI-Spt. Pkg.
SUR-16	ATGM Evasion	XMI-Spt. Pkg.
SUR-17	Evade Missile With Smoke	TC-79-15-19
SUR-18	Move to New Position With Smoke Coverage	TC-79-15-19
SUR-19	Abandon Tank	TC-79-15-11
SUR-20	Anti-Aircraft	XMI-Spt. Pkg.
SUSTAINING DRILLS (CREW)		
SUS-1	Combat Refueling	XMI-Spt. Pkg.
SUS-2	Combat Resupply	XMI-Spt. Pkg.
SUS-3	Reorganization on Objective	New
TANK GUNNERY DRILLS (CREW)		
G-1	Moving Target Engagement (Stabilized)	TC-17-15-11
G-2	Multiple Target Engagement	TC-17-15-11
G-3	Simultaneous Target Engagement	TC-17-15-11
G-4	Closed Hatch Main Gun Engagement	TC-17-15-11
G-5	Surprise Target Engagement	TC-17-15-11
G-6	Night Engagement	TC-17-15-11
G-7	Coax Engagement	TC-17-15-11
G-8	Aircraft Engagement	TC-17-15-11
G-9	Rangecard Engagement	TC-17-15-11
G-10	Rangecard Lay to Direct Fire Engagement	TC-17-15-11
G-11	Combat Misfire	TC-17-15-11
G-12	Redistribute Ammunition	TC-17-15-11
G-13	Critical Target Selection	New
G-14	Prepare Rangecard	New
PLATOON LEADER/PLATOON SERGENAT DRILLS		
PLS-1	Receipt of Warning Order	New
PLS-2	Receipt of Operation Order	New
PLS-3	Estimate of Situation	New
PLS-4	Operation Order	New
PLS-5	Action on Contact	New
PLS-6	Spot Report	New
PLS-7	Develop Situation	New
PLS-8	SITREP	New
PLS-9	Frag Order	New
PLS-10	Request Indirect Fire Support	New
PLS-11	Request TAC Air Support	New
PLS-12	Request Attack Helicopter Support	New
PLS-13	Platoon Sergeant Relieving Platoon Leader of Fire Support Duties	XMI-Spt. Pkg.







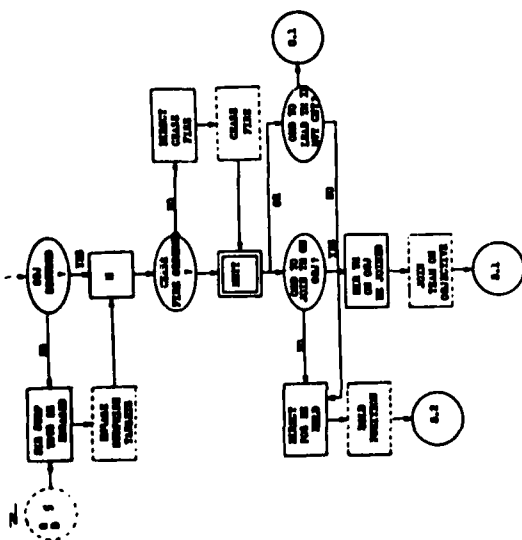
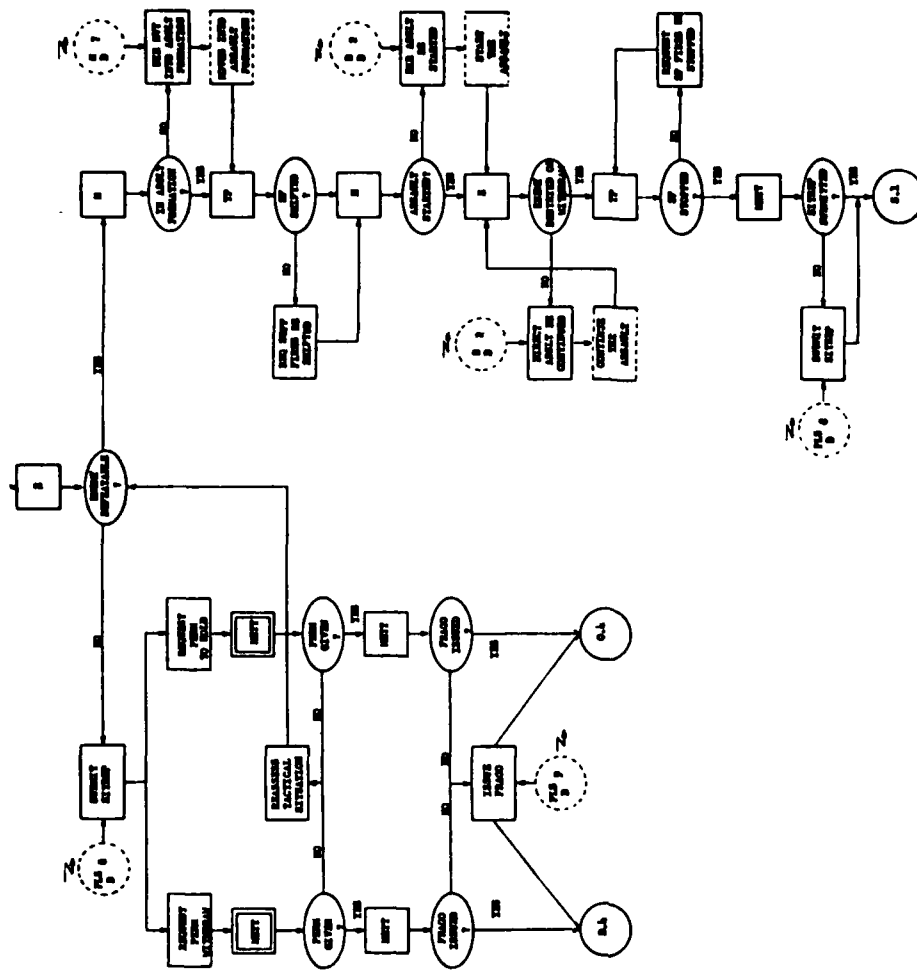






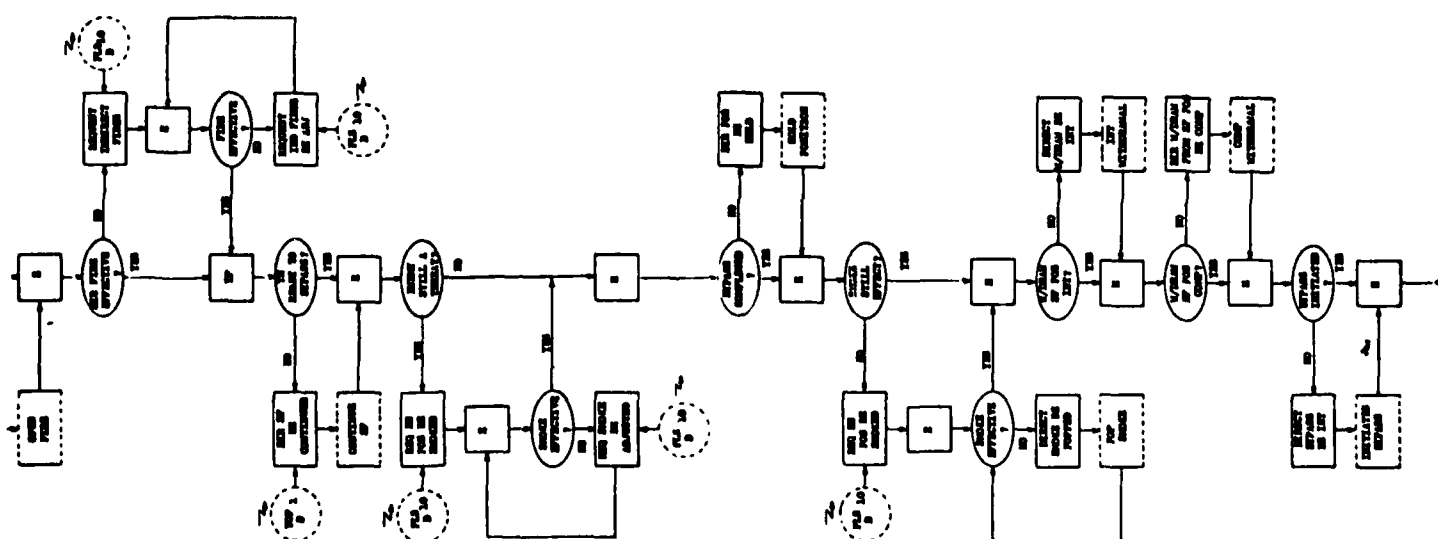
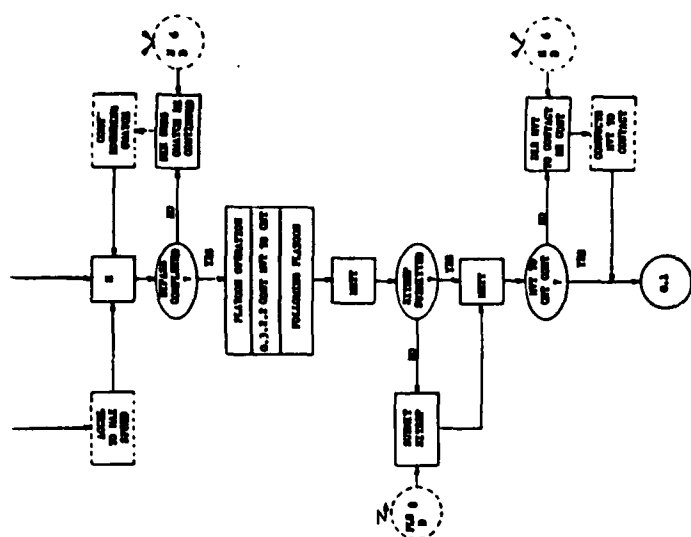
**FIGURE B-2. TANK TEAM OPERATION: HASTY ATTACK: STIMULI - DECISION - RESPONSE FLOW DIAGRAM (TANK PLATOON)**





H-2 Continued





**Figure H-3 Continued**

**Figure H-3 Continued on Page 81**



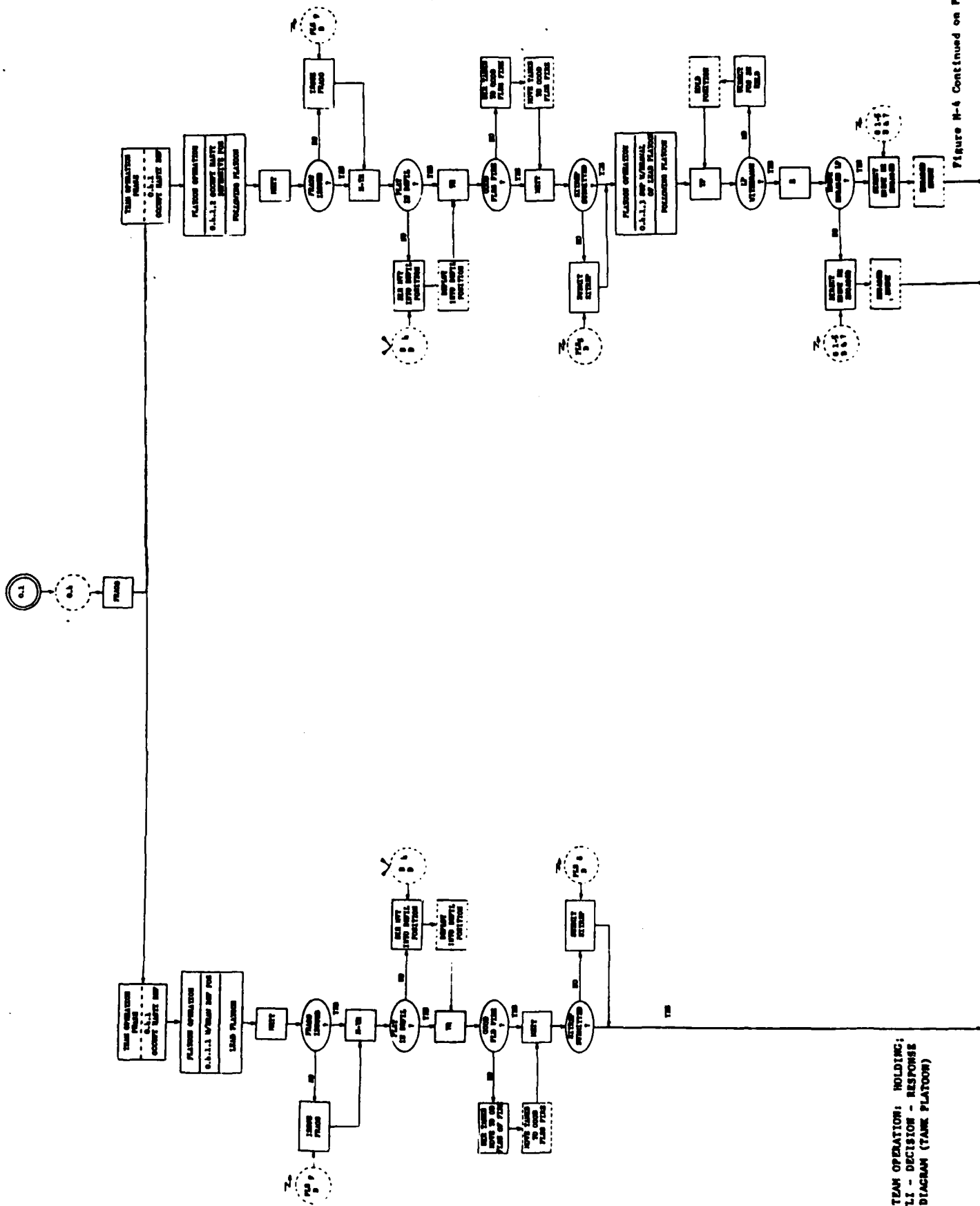


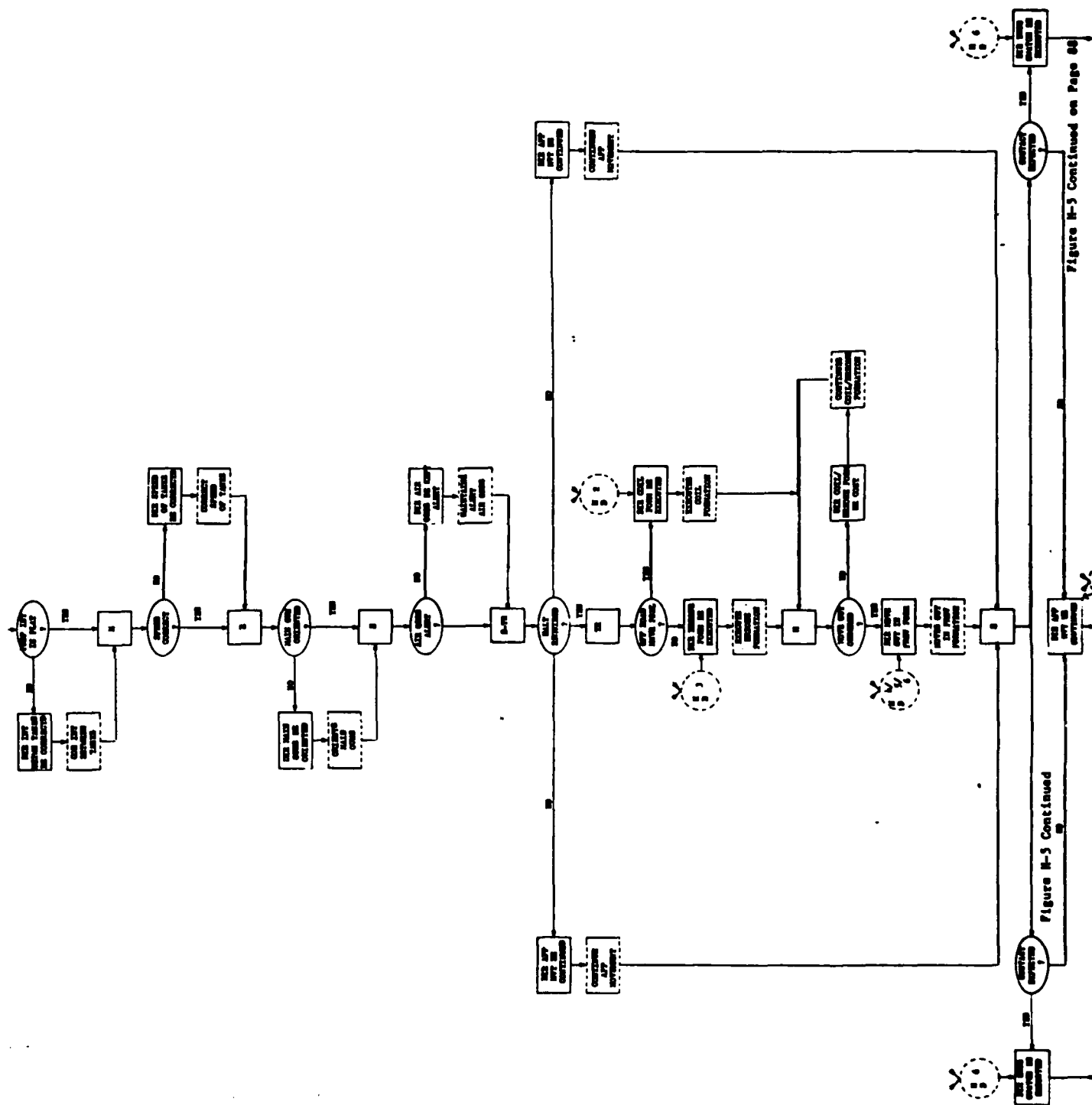
FIGURE B-4. TANK TEAM OPERATION: HOLDING;  
STIMULI - DECISION - RESPONSE  
FLOW DIAGRAM (TANK PLATOON)



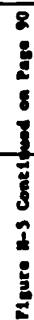










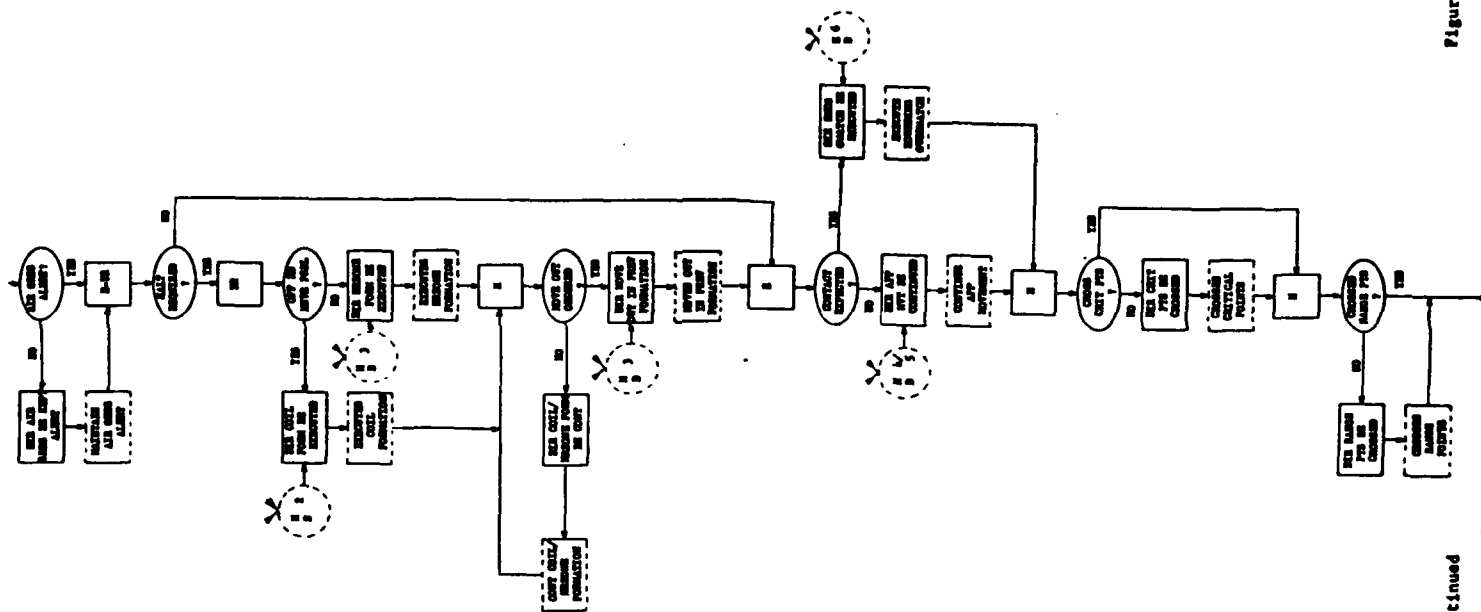












**Figure H-7 Continued on Page 95**

**Figure H-7 Continued**





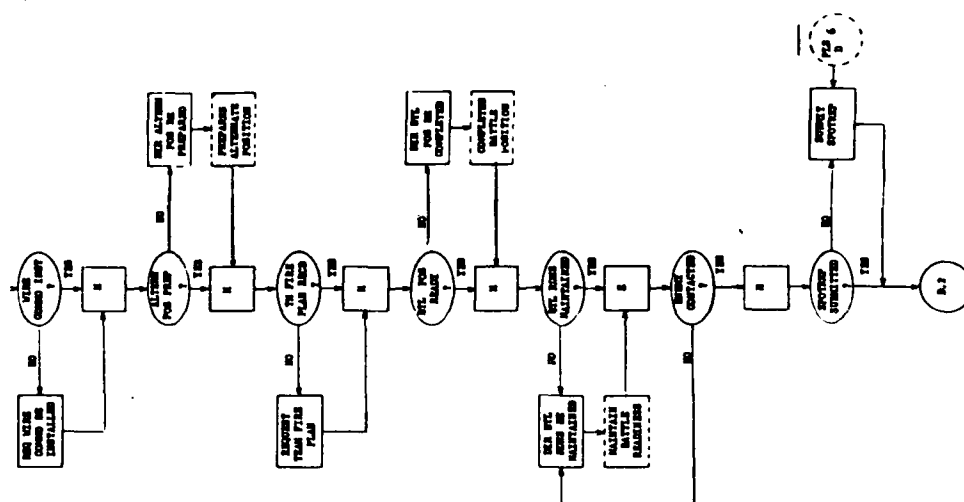


Figure H-7 Continued







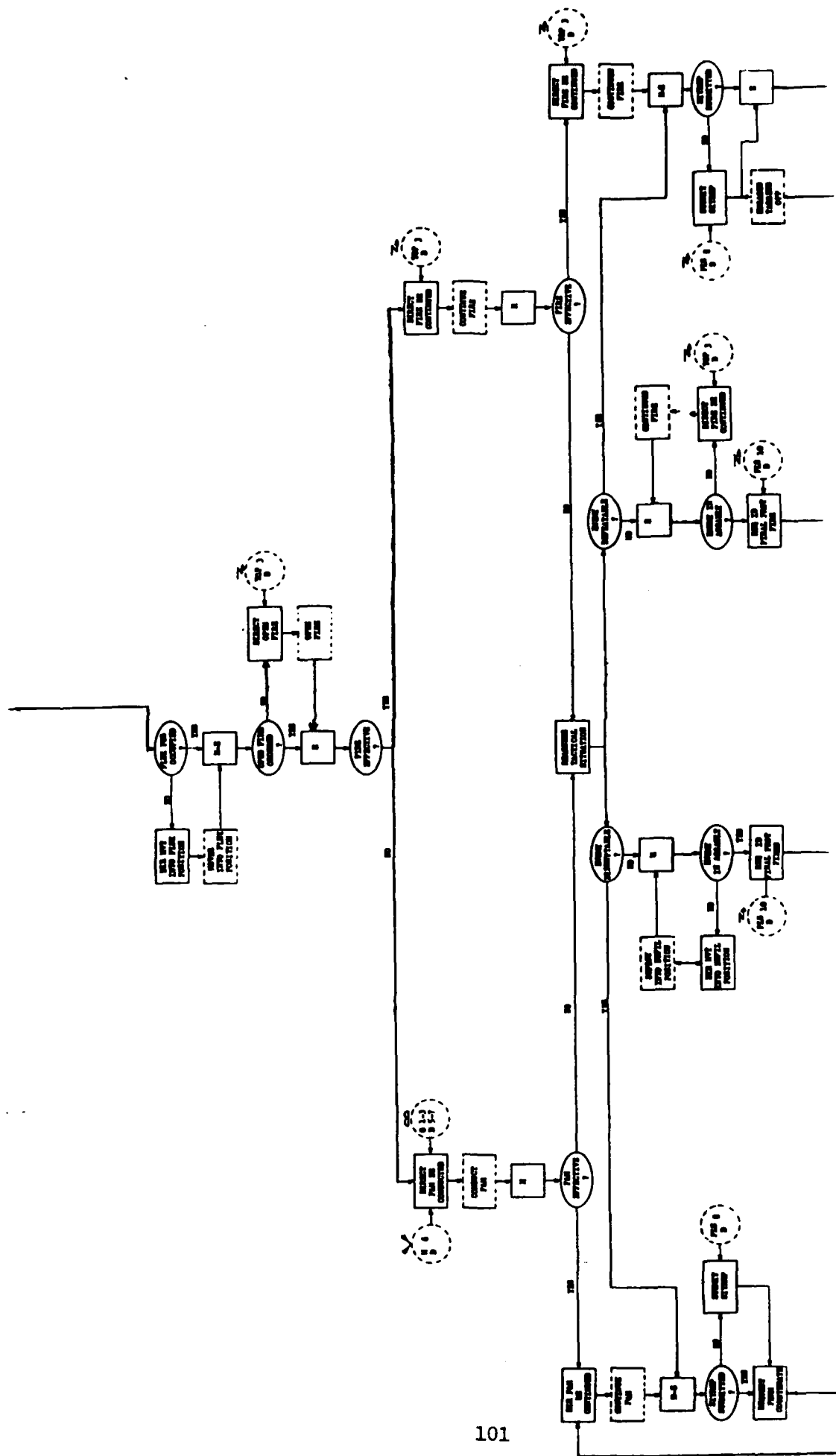
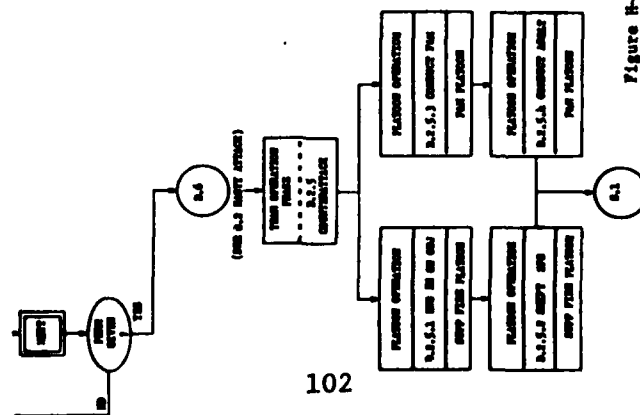


Figure H-8 Continued on Page 102

Figure H-8 Continued



**Figure H-8 Continued**

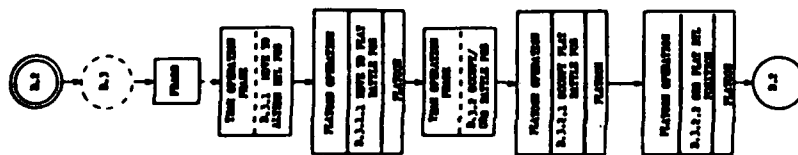
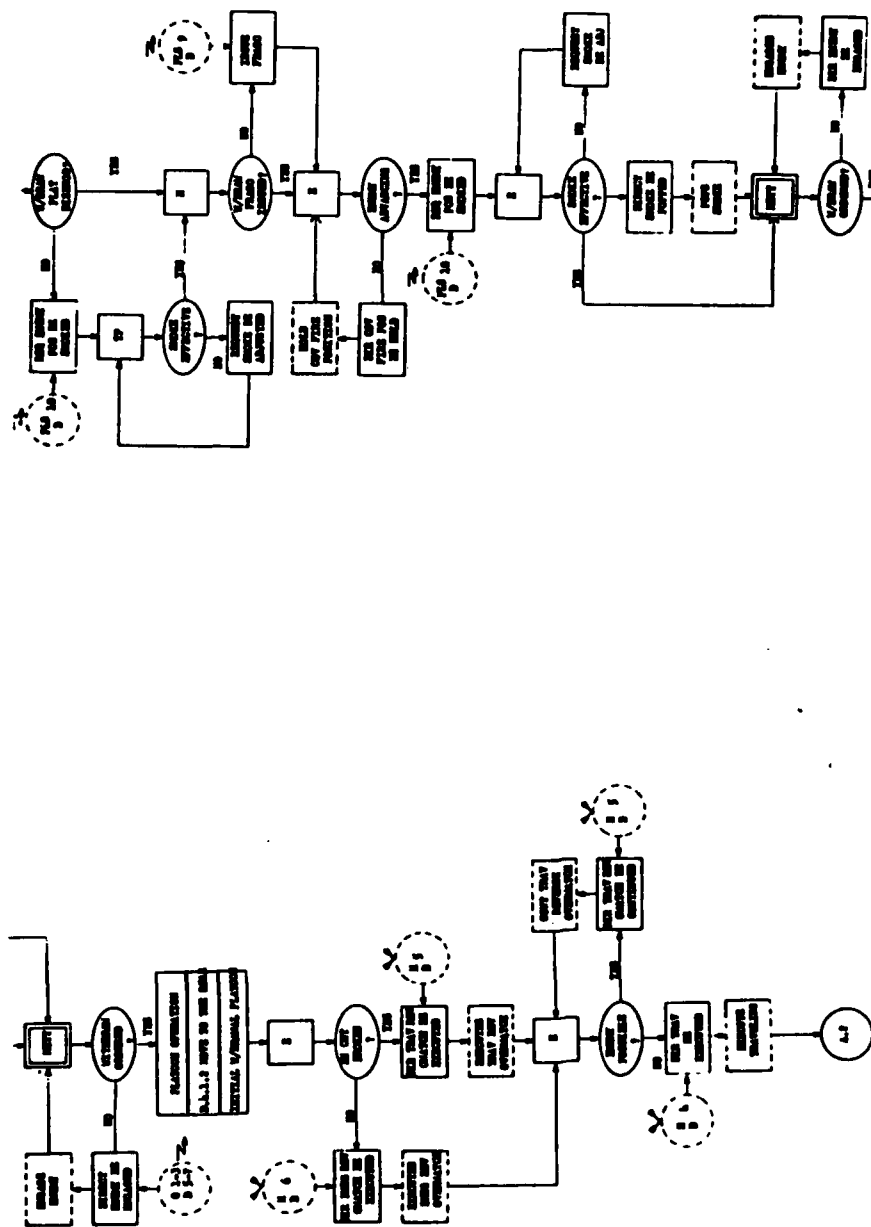


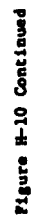
FIGURE H-9. TANK TEAM OPERATION: DISPLACE TO ALTERNATE BATTLE POSITION;  
STIMULI - DECISION - RESPONSE  
FLOW DIAGRAM (TANK PLATOON)  
(SEE D.1 OCCUPY BATTLE POSITION)





B-10 Continued

Figure B-10 Continued on Page 106





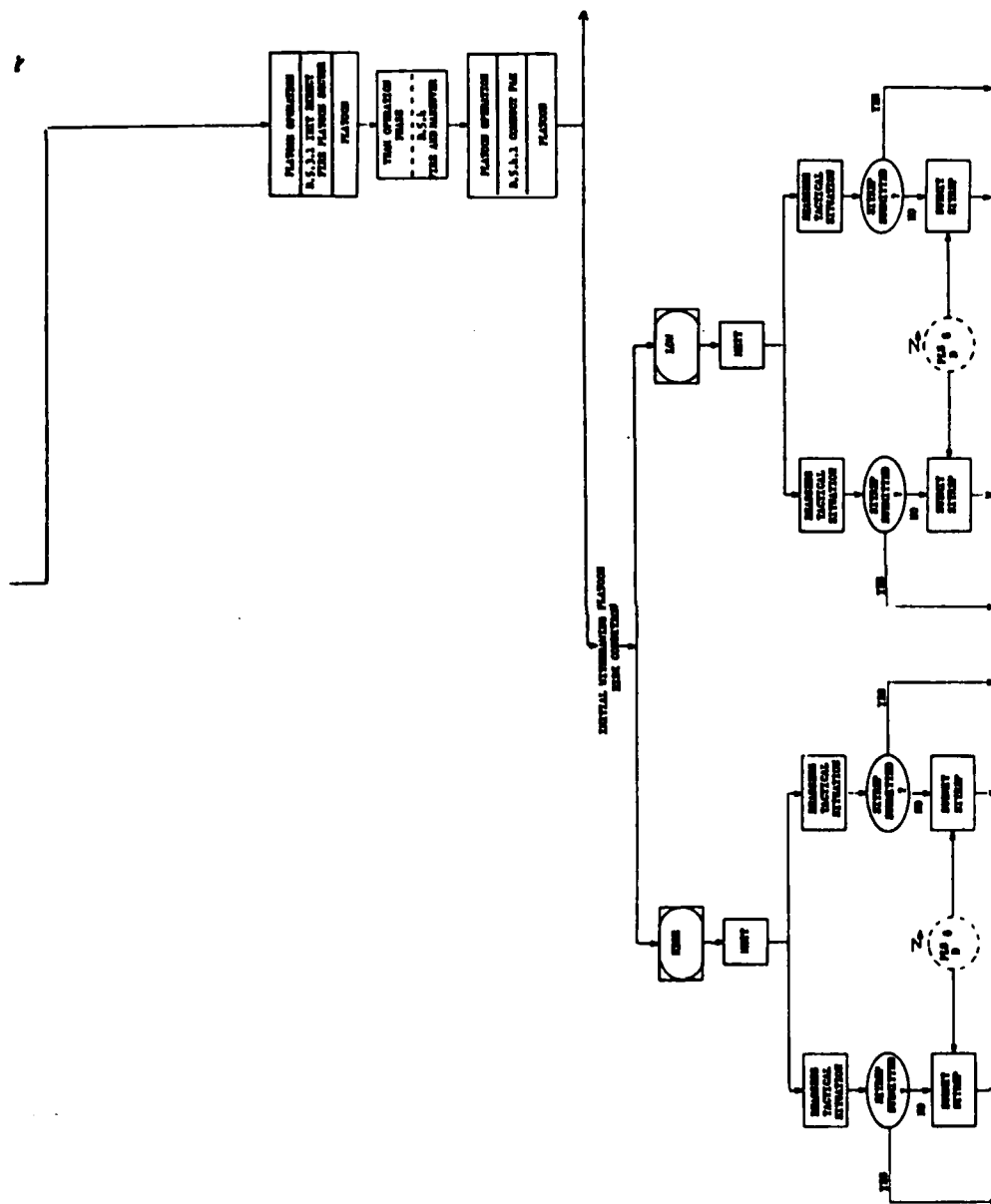


Figure H-11 Continued

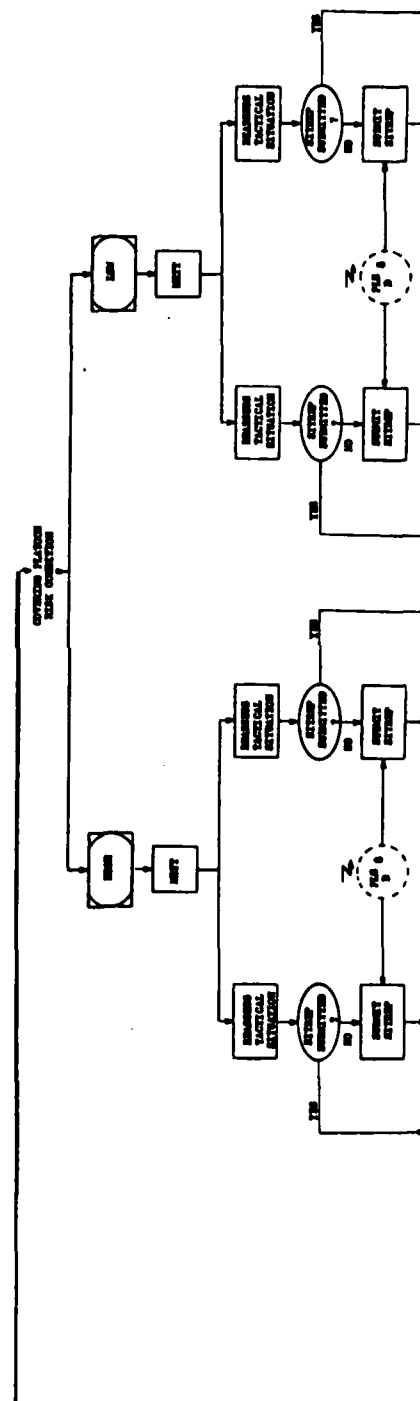


Figure H-11 Continued on Pages 109a and 109b









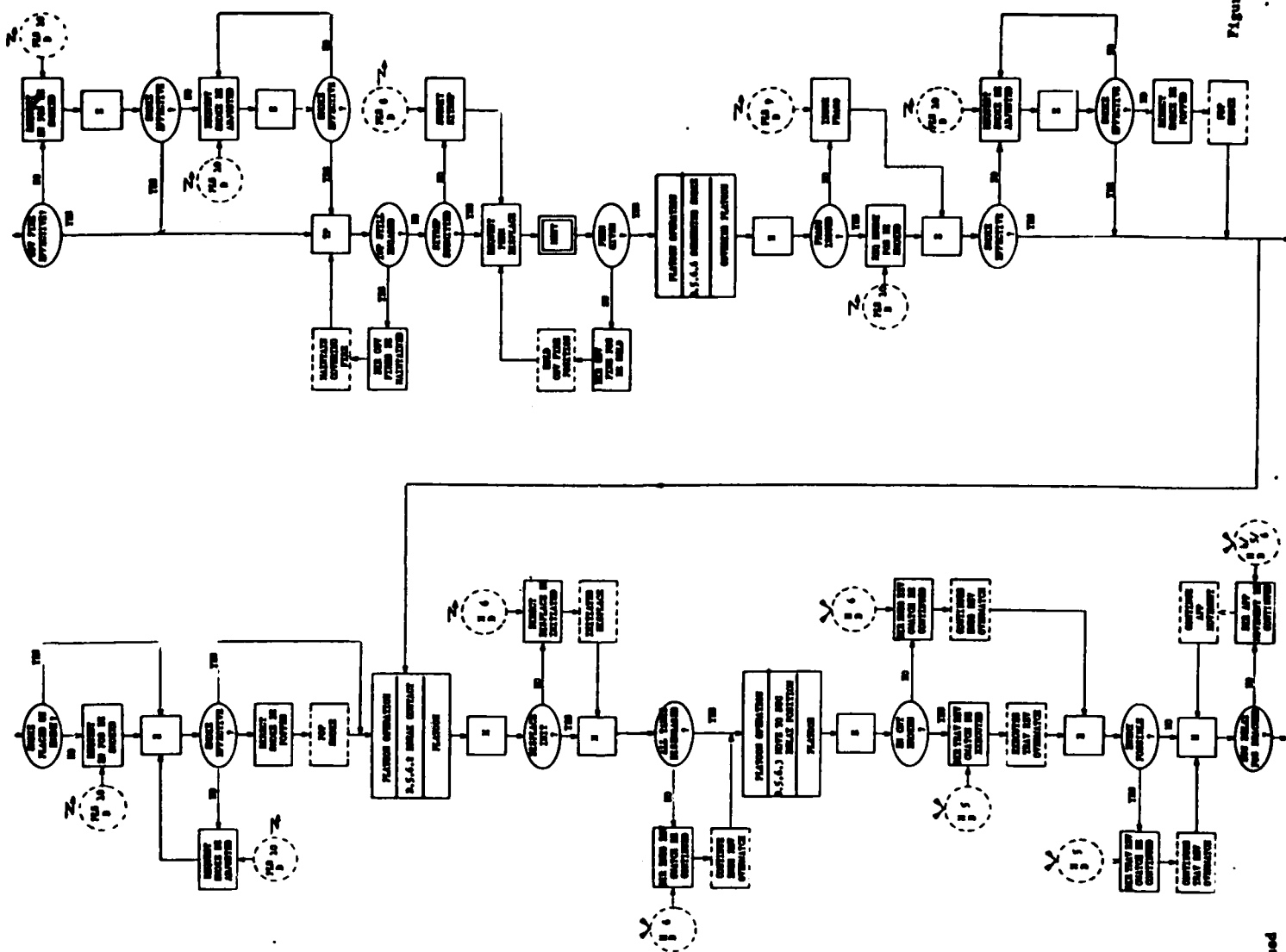
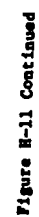


Figure B-11 Continued on Page 112

Figure B-11 Continued







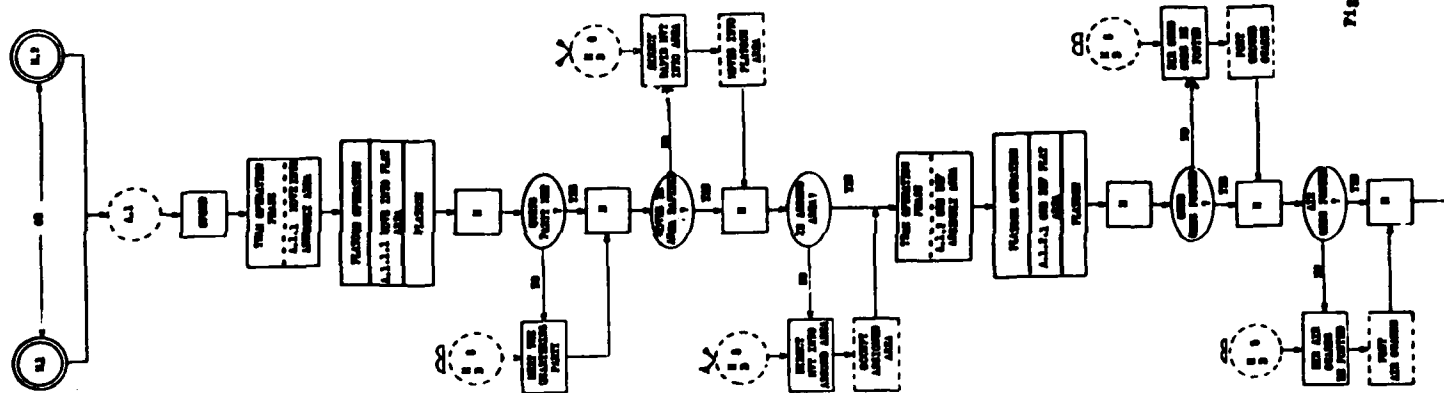
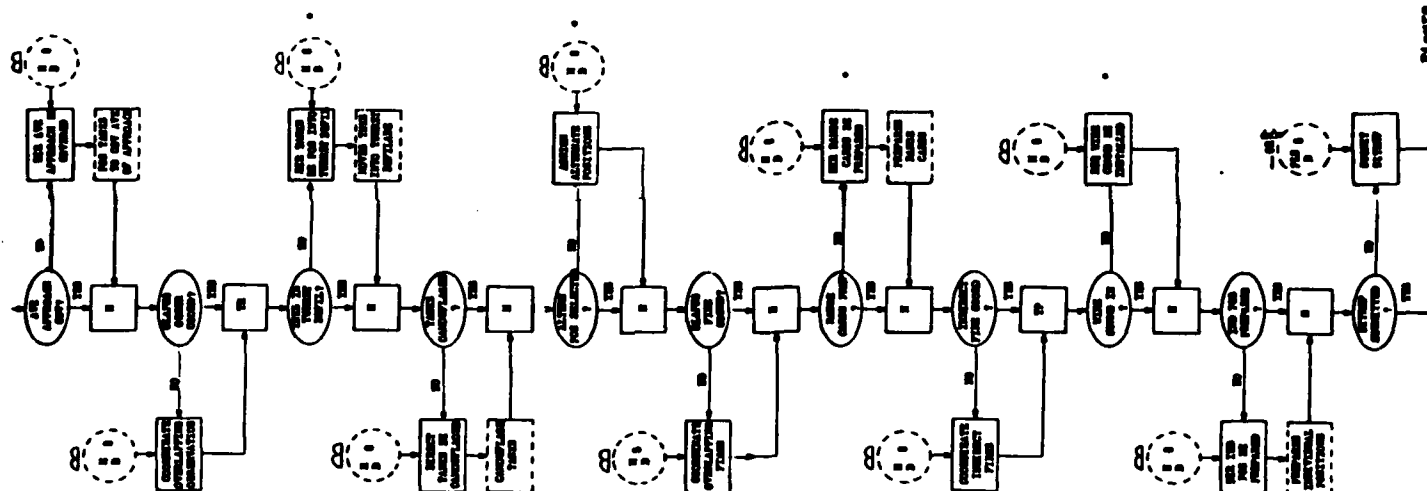
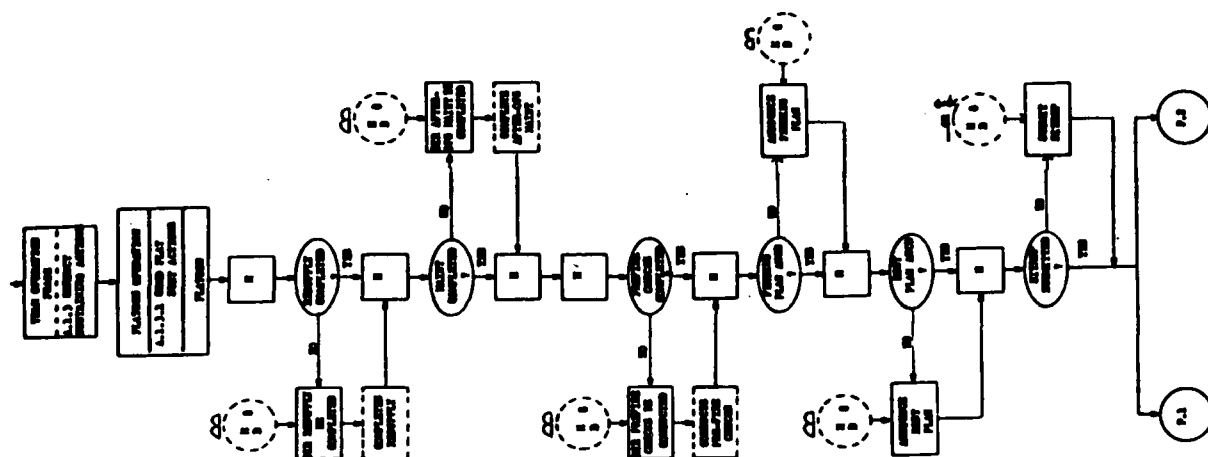


FIGURE B-13. TANK TEAM OPERATION: OCCUPY REAR ASSEMBLY AREA; STIMULI - DECISION - RESPONSE FLOW DIAGRAM (TANK PLATOON)

Figure B-13 Continued on Page 11b



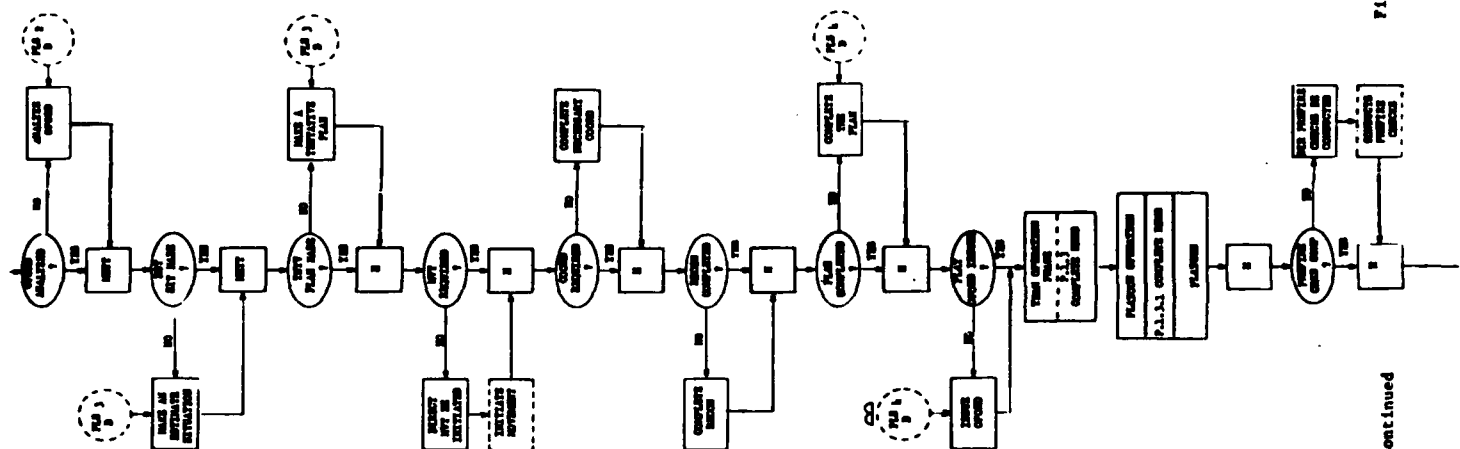


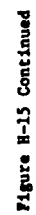
• SYSTEM ARCHITECTURE (S.A.) TO BE USED FOR DESIGNING AND BUILDING

Figure N-13 Continued

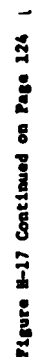












123

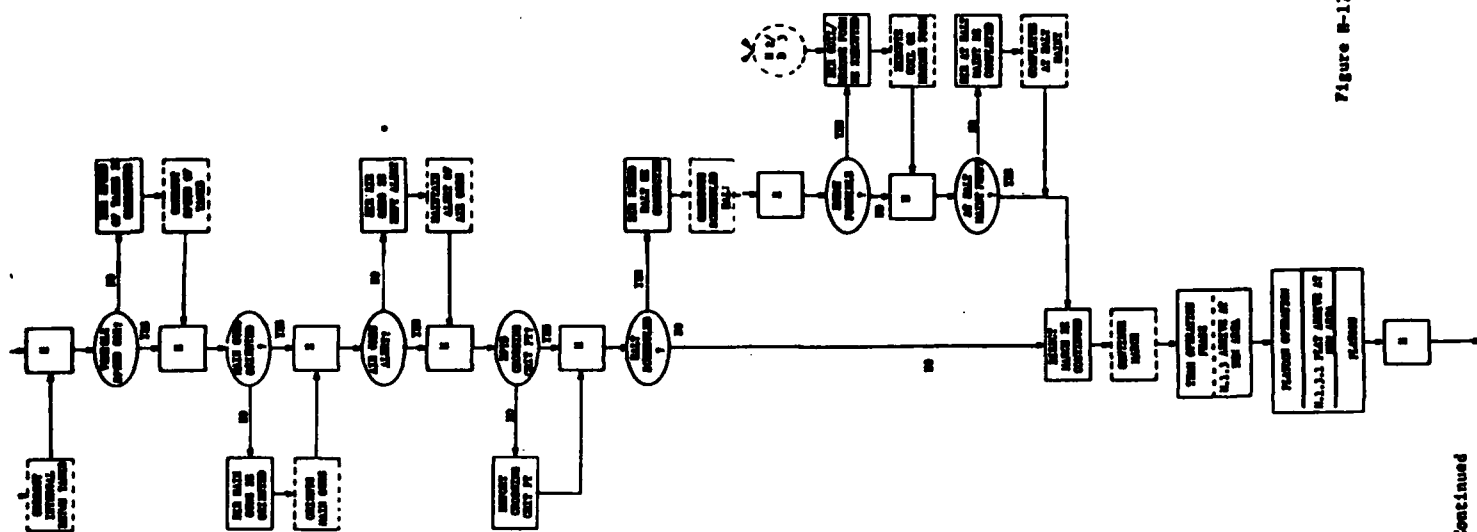


Figure H-17 Continued on Page 125

**Figure M-17 Continued**

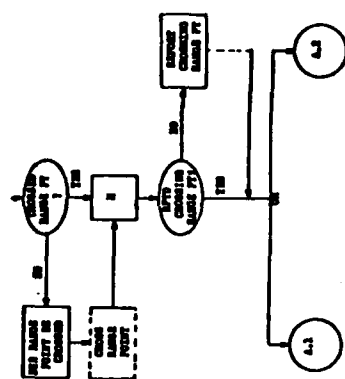


Figure H-17 Continued

• ACTIONS NORMALLY DONE ONLY DURING A TACTICAL ROAD MARCH.

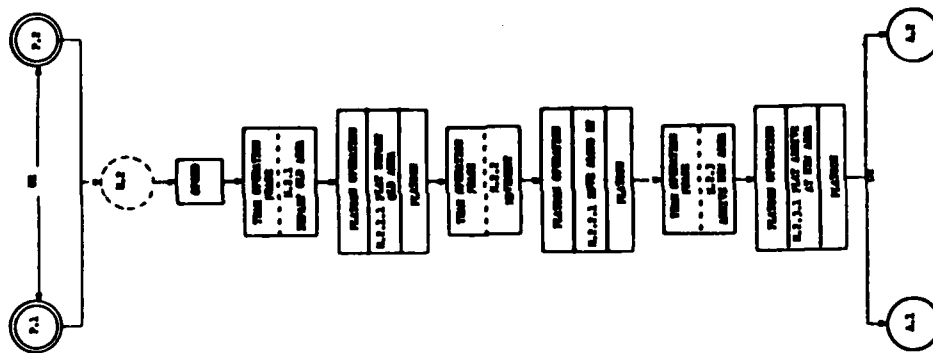


FIGURE E-18. TANK TEAM OPERATION: TACTICAL ROAD MARCH: STINGUCCI - DECISION - RESPONSE FLOW DIAGRAM (TANK PLATOON) (SEE H.1 ADMINISTRATIVE ROAD MARCH)

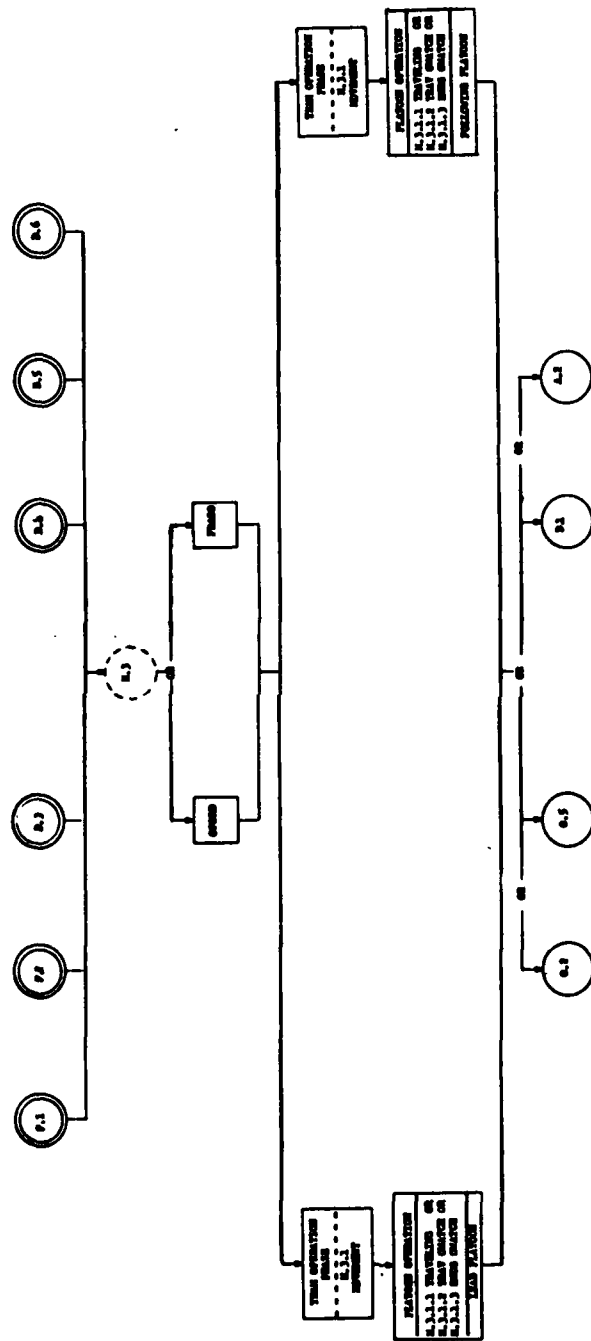
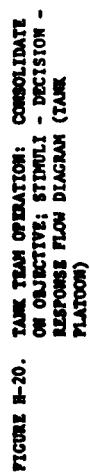


FIGURE B-19. TANK TEAM OPERATION: TACTICAL MOVEMENT; STIMULI - DECISION - RESPONSE FLOW DIAGRAM (TANK PLATOON) (SEE 0.1 MOVEMENT TO CONTACT)



**Figure H-20 Continued on Page 129**



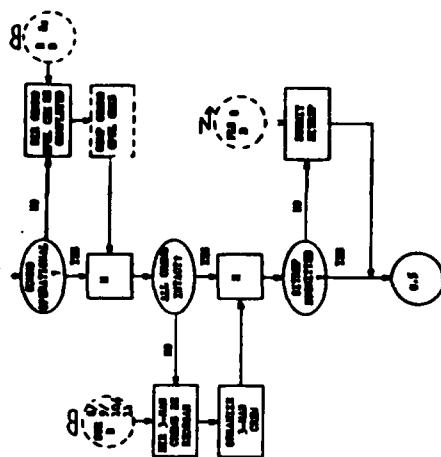


Figure H-20 Continued

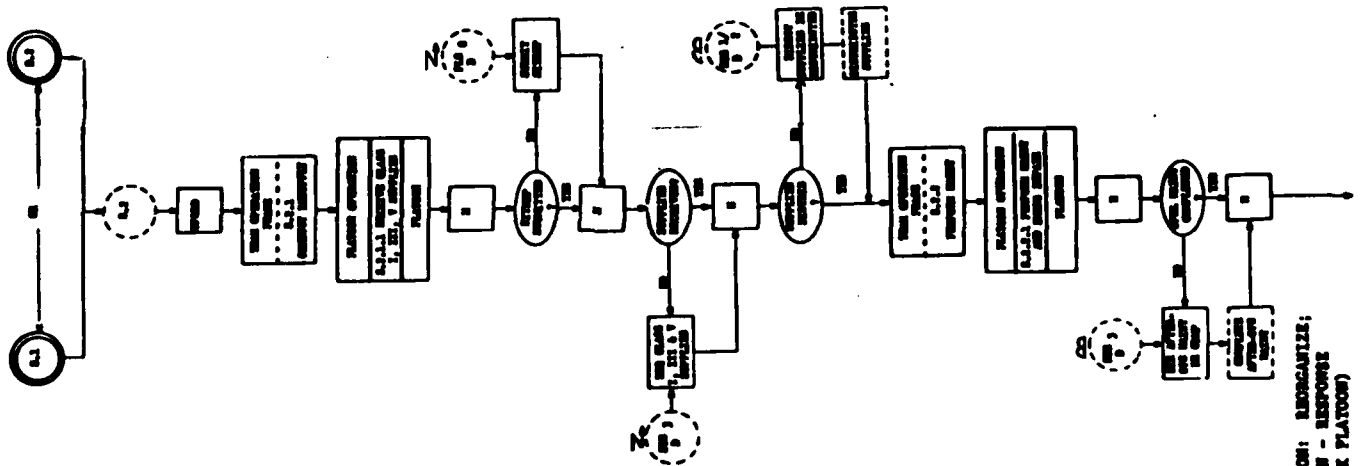


FIGURE B-21. TANK TEAM OPERATION: REORGANIZE; STIMULI - DECISION - RESPONSE FLOW DIAGRAM (TANK PLATOON)

